

**PUBLIC NOTICE**  
**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LDEQ)**  
**CONOCOPHILLIPS COMPANY/LAKE CHARLES REFINERY**  
**PUBLIC HEARING AND REQUEST FOR PUBLIC COMMENT ON DRAFT**  
**ADMINISTRATIVE ORDER FOR POST-CLOSURE CARE OF HAZARDOUS WASTE UNIT**

The LDEQ, Office of Environmental Services, will conduct a public hearing to receive comments on a draft administrative order for post-closure care for the North Landfarm at the ConocoPhillips Company, Lake Charles Refinery, 2200 Old Spanish Trail, Westlake, Louisiana 70669.

The hearing will be held on **Tuesday, September 9, 2008, beginning at 6:00 p.m. at the Westlake Council Chambers, 1001 Mulberry Street, Westlake, LA 70669.** During the hearing, all interested persons will have an opportunity to comment on the draft administrative order.

The LDEQ proposes to issue an administrative order to the ConocoPhillips Company addressing post-closure care (including groundwater monitoring) of the interim status hazardous waste unit and facility-wide corrective action at the Lake Charles Refinery. ConocoPhillips has been performing post-closure care for the North Landfarm since its closure on March 1, 1999. As allowed for by the regulations, the LDEQ proposes to issue this draft administrative order to ConocoPhillips in lieu of a post-closure permit. The draft administrative order meets the substantive requirements of a post-closure permit.

Written comments, or written requests for notification of the final decision regarding this action may also be submitted to Ms. Soumaya Ghosn at LDEQ, Public Participation Group, P.O. Box 4313, Baton Rouge, LA 70821-4313. **Written comments and/or written requests must be received by 12:30 p.m., Thursday, September 11, 2008.** Written comments will be considered prior to a final decision.

LDEQ will send notification of the final decision to the facility and to each person who has submitted written comments or a written request for notification of the final decision.

The Administrative Order for Post-Closure Care, LAD990683716-AO-1 and associated information is available for review at the LDEQ, Public Records Center, Room 127, 602 North 5<sup>th</sup> Street, Baton Rouge, LA. Viewing hours are from 8:00 a.m. to 4:30 p.m., Monday through Friday (except holidays). **The available information can also be accessed electronically on the Electronic Document Management System (EDMS) on the LDEQ public website at [www.deq.louisiana.gov](http://www.deq.louisiana.gov).**

Additional copies may be reviewed at the Calcasieu Parish Library-Westlake Branch, 937 Mulberry Street, Westlake, LA 70669-4601 and Calcasieu Parish Library-Sulphur Regional Branch, 1160 Cypress Street, Sulphur, LA 70663-5111.

Individuals with a disability, who need an accommodation in order to participate in the public hearing, should contact Heather Manry at the above address or by phone at (225) 219-3279.

Inquiries or requests for additional information regarding this action should be directed to Karl W. Leonards, LDEQ, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313, phone (225) 219-3477.

Persons wishing to be included on the LDEQ public notice mailing list or for other public participation related questions should contact the Public Participation Group in writing at LDEQ, P.O. Box 4313, Baton Rouge, LA

70821-4313, by email at [deqmaillistrequest@la.gov](mailto:deqmaillistrequest@la.gov) or contact the LDEQ Customer Service Center at (225) 219-LDEQ (219-5337).

**Permit public notices including electronic access to this draft action and associated information** can be viewed on the LDEQ permits public webpage at [www.deq.louisiana.gov/apps/pubNotice/default.asp](http://www.deq.louisiana.gov/apps/pubNotice/default.asp) and general information related to the public participation in permitting activities can be viewed at [www.deq.louisiana.gov/portal/tabid/2198/Default.aspx](http://www.deq.louisiana.gov/portal/tabid/2198/Default.aspx).

Alternatively, individuals may elect to receive the public notices via email by subscribing to the LDEQ permits public notice List Server at [www.doa.louisiana.gov/oes/listservpage/ldeq\\_pn\\_listserv.htm](http://www.doa.louisiana.gov/oes/listservpage/ldeq_pn_listserv.htm)

**All correspondence should specify AI Number 2538, EPA ID Number LAD990683716, and Activity Number PER20010017.**

**Scheduled for publication: Thursday, July 17, 2008**

DRAFT HAZARDOUS WASTE  
ENFORCEABLE DOCUMENT

CONOCOPHILLIPS COMPANY  
LAKE CHARLES REFINERY  
NORTH LANDFARM AND SITE-WIDE  
CORRECTIVE ACTION  
LAD990683716-AO-1  
AI#2538/PER20010017

RECORD CENTER COPY

BOBBY JINDAL  
GOVERNOR



HAROLD LEGGETT, PH.D.  
SECRETARY

**State of Louisiana**  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

CERTIFIED MAIL 7003 2260 0005 9323 6329

Mr. Kevin McGee  
ConocoPhillips Company  
Lake Charles Refinery  
2200 Old Spanish Trail  
Westlake, LA 70669

**RE: Administrative Order LAD990683716-AO-1**  
**Post-Closure Care of the North Landfarm (an Interim Status Hazardous Waste Unit)**  
**and Site-Wide Corrective Action**  
**AI# 2538 - PER20010017**

Dear Sir:

Attached is your copy of a draft Administrative Order to be issued by the Louisiana Department of Environmental Quality in lieu of a post-closure permit in accordance with LAC 33:V.4396. This draft Administrative Order addresses post-closure care of the North Landfarm, an interim status hazardous waste unit, and site-wide corrective action at the ConocoPhillips - Lake Charles Refinery located at 2200 Old Spanish Trail, Westlake, Louisiana.

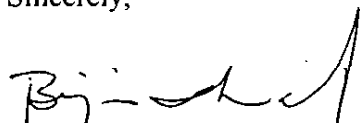
A comment period of forty-five (45) days will be allowed for the public to review and comment on this draft Administrative Order. A public hearing will also be scheduled at least forty-five (45) days after the date on which the public notice is given. Specific dates for the beginning and end of the comment period are contained in the attached public notice.

Prior to taking a final action on the draft Administrative Order, the Department will consider all significant comments that are submitted. Written comments must be submitted no later than 12:30 p.m. on the final day of the comment period. The issuance of the final decision will be in accordance with LAC 33:V.705.

In addition, in the May 14, 2008, information submittal entitled, "Response to Comments November 15, 2007", ConocoPhillips requested a waiver of the preparedness and prevention requirements of LAC 33:V.1511, pursuant to LAC 33:V.517.H. The Department will not grant this waiver of the requirements of LAC 33:V.1511, but does recognize, as a result of information submitted in 2001 and 2008, that this enforceable document is for an interim status unit in post-closure with minimal care activities, and that the Lake Charles Refinery is a hazardous waste large quantity generator with a Site Emergency Action Plan for the Lake Charles Manufacturing Complex, which includes the refinery. The reference to the Site Emergency Action Plan satisfies the requirements for LAC 33:V.517.I and LAC 33:V.1511.

Please reference Agency Interest Number (2538), Activity Number (PER20010017) and EPA ID Number (LAD990683716)) on all correspondence pertaining to this matter. Any questions concerning this action should be directed to Mr. Karl W. Leonards at (225) 219-3477.

Sincerely,



Bijan Sharafkhani, P.E.  
Administrator  
Waste Permits Division

Attachments

c: Brett LeBlanc – LDEQ OEA-ETD, Acadiana Regional Office  
Elliot Vega – LDEQ OSECR-LSD

STATE OF LOUISIANA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL SERVICES

ADMINISTRATIVE ORDER

POST-CLOSURE CARE OF THE NORTH LANDFARM AND SITE-WIDE CORRECTIVE ACTION

IN THE MATTER OF

CONOCOPHILLIPS COMPANY  
LAKE CHARLES REFINERY  
CALCASIEU PARISH

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TRACKING NO.

LAD990683716-AO-1

AGENCY INTEREST NO.

PROCEEDINGS UNDER THE LOUISIANA  
ENVIRONMENTAL QUALITY ACT,  
La. R.S. 30:2001, ET SEQ.

2538

**I. PREAMBLE**

The following **ADMINISTRATIVE ORDER** is issued to **ConocoPhillips Company** (**Respondent**) by the Louisiana Department of Environmental Quality (the Department), under the authority granted by the Louisiana Environmental Quality Act (the Act), La. R.S. 30:2001, et seq., and particularly by La. R.S. 30:2011(D)(2), (D)(6) and (D)(14). This Order shall serve as an enforceable document in lieu of a post-closure permit as provided by the Louisiana Administrative Code, LAC 33:V.305.H and LAC 33:V.4396. This Order addresses post-closure care of the North Landfarm (the Unit), an interim status hazardous waste unit, and site-wide corrective action at the Lake Charles Refinery (the Facility).

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***ConocoPhillips Company / Lake Charles Refinery - AI# 2538***  
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**II. FINDINGS OF FACT**

**II.A. OWNER/OPERATOR INFORMATION**

The Respondent owns and/or operates the Lake Charles Refinery, a petroleum refinery located at 2200 Old Spanish Trail, Westlake, Calcasieu Parish, Louisiana. The Facility has been in operation since 1945 and has a crude oil processing capacity of 252 thousand barrels per day and the Facility processes heavy, high-sulfur and acidic crude oils. The Respondent has the EPA identification number LAD990683716 for hazardous waste activities.

**II.B. UNIT INFORMATION**

The Unit is classified as an interim status hazardous waste unit under the federal Resource Conservation and Recovery Act (RCRA), 40 CFR 270.Subpart G, and under LAC 33:V.Chapter 43. The Respondent operated the Unit for treatment of oily waste from 1982 to 1988. Waste applied included: primary and dissolved air floatation (DAF) sludges (K048); tertiary DAF skimmings; slop oil emulsion solids (K049); corrugated plate interceptor (CPI) separator sludges (F037); American Petroleum Institute (API) separator sludges; and crude oil sludges from tank clean-out events.

**II.C. CLOSURE AND POST-CLOSURE CARE OF THE UNIT**

The Respondent submitted closure and post-closure plans and addendums for the Unit in August 1991. The Department approved the plans and issued a Closure Permit in January 1992.

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Revised plans were requested by the Department since the Closure Permit expired on July 24, 1992. Revised plans entitled "The Revised North Landfarm Closure and Post-Closure Plans – Conoco's Response to Technical Notice of Deficiency", dated April 26, 1996, were approved by the Department on September 11, 1996.

The Unit was closed in compliance with the approved plans which reference and meet interim status requirements (LAC 33:V.Chapter 43). On October 26, 1998, the Respondent submitted a certification of closure. Verification of the certification was issued by the Department on March 1, 1999. Subsequently, the Respondent has been conducting post-closure care under requirements for interim status facilities (LAC 33:V.Chapter 43).

**II.D. SITE-WIDE CORRECTIVE ACTION**

In January 1987, the RCRA Facility Assessment (RFA) Report was submitted to the United State Environmental Protection Agency (USEPA). This report identified and assessed multiple solid waste management units (SWMUs) at the Facility.

The Facility was issued a RCRA Hazardous Waste Operating Permit (LAD990683716) on January 8, 1990, by the USEPA and the Department for another regulated unit that never operated. One condition of that permit required a RCRA Facility Investigation (RFI) to be conducted as part of the site-wide corrective action. The objective of the Phase I RFI was to complete the assessment of potential and known releases and migration of constituents of interest (COIs) from previously identified SWMUs.



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Subsequently, the Respondent has been conducting investigations and other activities related to site-wide corrective action mandated by the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA. Activities have included areas/units identified after the 1987 RFA Report.

**II.E. POST-CLOSURE RULE (ENFORCEABLE DOCUMENT IN LIEU OF)**

The post-closure care conditions for the Unit were never made part of a permit and the Unit remains in interim status. For facilities that closed without obtaining a permit, the Post-Closure Rule, finalized by the EPA on October 22, 1998, and adopted by the Department (LAC 33:V.305.H), allows an owner or operator to obtain, in lieu of a post-closure permit, an enforceable document (meeting the requirements of 40 CFR 271.16(e)) imposing the requirements of LAC 33:V.4396, at the discretion of the Department. However, the responsible party receiving the enforceable document must meet the same substantive requirements as a post-closure permit. As specified by the Post-Closure Rule, units covered by an enforceable document are still designated as interim status units.

**II.F. NECESSARY INFORMATION FOR ENFORCEABLE DOCUMENT**

On August 31, 2001, the Respondent submitted a consolidated permit application to the Department as an alternative, consolidated permitting mechanism for the Facility to fulfill permitting requirements for the following: 1) operating Type I solid waste surface impoundments; 2) post-closure requirements for the Unit; and 3) provisions for site-wide corrective action.

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During a September 11, 2007, conference call between the Department and the Respondent, it was decided that the solid waste and hazardous waste issues would be addressed separately. On November 15, 2007, the Department sent correspondence to the Respondent containing the necessary information requirements for the enforceable document. This submittal clarified an earlier submittal, dated August 7, 2007. After several extensions to the due date for submitting information, the Respondent's consultant (URS Corporation), submitted some site-wide corrective action information on April 28, 2008, and some additional information on May 14, 2008.

**II.G. DEFICIENCIES IN THE INFORMATION SUBMITTALS**

The Respondent has not provided all the necessary information required by the Department to enter into a Cooperative Agreement. Accordingly, the Department is issuing an Administrative Order with a Schedule of Compliance.

**III. ORDER REQUIREMENTS**

Based on the foregoing, the Respondent is hereby ordered:

**III.A. PROVISIONS OF THE ORDER**

**III.A.1. Severability**

The conditions of this Order are severable and if any provisions of this Order or the application of any provision of this Order to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected thereby.

**Administrative Order - LAD990683716-AO-1****ConocoPhillips Company / Lake Charles Refinery - AI# 2538****Page 6****III.A.2 Ownership Transfer**

Any documents transferring ownership and/or operations of the Unit and/or site-wide corrective action from the Respondent to a successor-in-interest shall include written notice and a copy of this Order to the successor-in-interest. The Respondent shall provide written notification of the transfer to the Department in accordance with LAC 33:I.Chapter 19; the notification shall include written confirmation that the successor-in-interest received the required written notice and copy of this Order.

The Respondent shall be subject to the provisions of this Order until such time that a final permit, order or other enforceable document is issued to the new owner or operator and made effective and this Order is terminated. At such time that a final permit, order or other enforceable document is issued to a new owner or operator and made effective, the Respondent must submit a request to the Office of Environmental Services, Waste Permits Division to terminate this Order. Any new permit, order or other enforceable document issued to the new owner or operator must contain provisions for financial assurance for post-closure care of the unit.

**III.A.3. Modification or Amendment of the Order**

All requests for amendments or modifications to change the conditions of the Order shall be submitted to the Department's Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313, in writing

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for approval. In accordance with LAC 33:V.4396.B.1., amendments, modifications to the Order involving any selection and implementation of a final remedy under LAC 33:V.3321 or 3322, request to terminate a site-wide corrective action approved under LAC 33:V.3319, 3321 or 3322, or request for reduction or termination of the thirty (30) year post-closure requirements will require public notice and opportunity for comment as required by LAC 33:V.4396.B.

Other changes may be public noticed at the discretion of the Department and consistent with LAC 33:V.321. This shall include, but not be limited to, incorporation of approved plans into the Order and the submittal of subsequent amendments.

**III.A.4. Incorporation of Submittal Material**

Reports, plans, specifications, schedules, attachments and response documents submitted as a requirement of this Order shall be deemed incorporated into this Order upon approval. The Department shall notify the Respondent in writing of any approval or disapproval of reports, plans, specifications, schedules, attachments, and response documents or any part thereof as necessary.

Attachment 1 lists those documents which have been incorporated by reference into this Order. This list shall be updated by the Department as necessary.

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*ConocoPhillips Company / Lake Charles Refinery - AI# 2538*

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### **III.B. RESPONSIBILITIES OF THE RESPONDENT**

#### **III.B.1. Duty to Comply**

The Respondent shall comply with all conditions of this Order, except to the extent and for the duration such noncompliance may be authorized in writing by the Department. Any noncompliance, other than noncompliance authorized in writing by the Department, constitutes violation of the LAC 33:V.Subpart 1 and the Act and are grounds for enforcement action. Notwithstanding any other provisions of LAC 33:V.Subpart 1, enforcement actions may be brought in accordance with La. R.S. 30:Chapter 2-A (2050.1 *et seq.*), including, but not limited to, Cease and Desist Orders issued pursuant to La. R.S. 30:2050.8.

#### **III.B.2. Proper Operation and Maintenance**

The Respondent shall at all times properly operate and maintain all facilities and systems for treatment and control (and related ancillary equipment) that are installed or used by the Respondent to achieve compliance with the conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the Order.

**Administrative Order - LAD990683716-AO-1****ConocoPhillips Company / Lake Charles Refinery - AI# 2538****Page 9****III.B.3. Duty to Provide Information**

The Respondent shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order, or to determine compliance with this Order. The Respondent shall also furnish to the Department upon request, copies of records required by this Order.

**III.B.4. Retention of Records**

Except as otherwise provided in this Order, the Respondent shall, for the duration of the post-closure care period and corrective action, maintain records of all data used to meet the requirements of this Order and any supplemental information submitted under the Louisiana Hazardous Waste Control Law (La. R.S. 30:2171 et seq.). The maintained records must include records from all groundwater monitoring wells and associated groundwater surface elevations. All records, including plans, must be furnished upon request and made available at all reasonable times as required by LAC 33:V.1529.C. File copies shall be kept for inspection by the Department for a period of not less than three years as required by LAC 33:V.317.B.

**III.B.5. Notice of Facility Changes**

In accordance with LAC 33:V.309.L.1, the Respondent shall give notice to the Department, as soon as possible, of any planned physical alterations or additions to the Unit or site-wide corrective action.

**Administrative Order - LAD990683716-AO-1****ConocoPhillips Company / Lake Charles Refinery - AI# 2538****Page 10****III.B.6. Notification of Unauthorized Discharges and Noncompliance**

In the event of unauthorized discharge(s) from the Facility or non-compliance with the Order which may endanger human health or the environment, the Respondent must comply with LAC 33:V.309.L.7 and report the event to the Department in accordance with the procedures of LAC 33:I.Chapter 39. With respect to any other non-compliance, Respondent shall follow the applicable reporting requirements of LAC 33:V.309.L.

**III.B.7. Signatory Requirement**

All applications, reports or other information submitted to the Department shall be signed and certified according to LAC 33:V.507, 509, 511, and 513.

**III.B.8. Annual Reporting Requirements**

By March 1<sup>st</sup> of each year, an annual report shall be submitted covering all activities during the previous calendar year as required by LAC 33:V.1529.D. The annual report must summarize post-closure care activities, groundwater monitoring and site-wide corrective action activities from the previous year. The report must be submitted to the Office of Environmental Services, Environmental Assistance Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. A copy must also be sent to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313.

**Administrative Order - LAD990683716-AO-1****ConocoPhillips Company / Lake Charles Refinery - AI# 2538****Page 11****III.B.9. Design and Operation of the Post-Closure Unit(s)**

**III.B.9.a.** The Respondent must maintain all facilities to minimize the possibility of a fire, explosion, or any unauthorized sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or water that could threaten human health or the environment.

**III.B.9.b.** The Respondent must not manage any new wastes in the Unit or SWMU/AOC(s) covered under this Order.

**III.B.10. Post-Closure Care Period**

In accordance with LAC 33:V.3521, the period of post-closure care for the Unit shall not be less than thirty (30) years, unless an alternative duration is demonstrated under the requirements of LAC 33:V.3521. The period of post-closure care commenced on March 1, 1999 as detailed in Section II.C of the Order. The post-closure care may not be terminated if corrective action is ongoing at the Unit.

**III.B.11. Certification of Completion of Post-Closure Care**

Pursuant to LAC 33:V.3527, no later than sixty (60) days after completion of the established post-closure care period for the Unit, the Respondent must submit to the Department, by registered mail, a certification that the post-closure period was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by the Respondent and an independent registered professional engineer. Within sixty (60) days after receipt of the certification, the



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Department will notify the Respondent that he is no longer required to maintain financial assurance for post-closure care of the Unit, unless the Department has reason to believe that post-closure care was not conducted in accordance with the approved Post-Closure Plan. The certification of post-closure care shall include the certification statement found in LAC 33:V.513.A or the current certification statement in the hazardous waste regulations at the time of completion of post-closure care.

**III.B.12. Post-Closure Care Cost Estimate**

The Respondent must maintain a current post-closure cost estimate for the Unit and associated structures as required by LAC 33:V.3709 (see Attachment 1) for the duration of the post-closure care period. In particular, the Respondent must adjust and maintain the post-closure cost estimate for inflation and other circumstances that change the cost of post-closure.

**III.B.13. Financial Assurance****III.B.13.a. Post-Closure Care**

Throughout the post-closure care period, the Respondent must provide financial assurance for post-closure care in accordance with LAC 33:V.Chapter 37.Subchapter B. post-Closure Requirements and updates for its financial assurance mechanisms, as necessary, to comply with the provisions of LAC 33:V.3711 (see Attachment 1).

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*ConocoPhillips Company / Lake Charles Refinery - AI# 2538*

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### **III.B.13.b. Corrective Action (Final Remedies)**

The Respondent shall provide financial assurance to the Department for corrective action within sixty (60) days of any new final remedy selection.

### **III.B.14. Incapacity of the Respondent or Operators, or Guarantors**

In accordance with LAC 33:V.3717.A, the Respondent must notify the Department by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the Respondent as a debtor, within ten (10) days after the commencement of the proceeding. Should the Respondent obtain a corporate guarantee for financial assurance, the guarantor of the corporate guarantee must make such a notification if he is named as debtor, as required by the terms of the corporate guarantee (LAC 33:V.3719.H).

### **III.B.15. Incapacity of Financial Institutions**

In accordance with LAC 33:V.3717.B, should the Respondent fulfill the requirements of LAC 33:V.3707, 3711 or 3715 by obtaining a trust fund, surety bond, letter of credit, or insurance policy, the Respondent will be deemed to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter or credit or insurance policy to issue such instruments. The Respondent must establish other financial assurance within sixty (60) days after such an event.

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*ConocoPhillips Company / Lake Charles Refinery - AI# 2538*  
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**III.B.16. Post-Closure Notices**

If the Respondent wishes to remove hazardous wastes and hazardous waste residues, the liner (if any), or contaminated soils, he must request a modification to the Order in accordance with Section III.A.3 of the Order. The Respondent must demonstrate that the removal of hazardous wastes will satisfy the criteria of LAC 33:V.3521. By removing hazardous waste, the Respondent may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of LAC 33:V.Subpart 1. If granted a modification or other approval to conduct such removal activities, the Respondent may request, in accordance with LAC 33:V.3525.C., that the Department approve either:

**III.B.16.a. Removal of Notation**

the removal of the notation on the deed to the facility property or other instrument normally examined during title search; or

**III.B.16.b. Additional Notation**

the addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

**III.C. SCHEDULE OF COMPLIANCE**

**III.C.1. LAC 33:V.515 Information Submittal**

Within thirty (30) days of issuance of this Order, the Respondent must submit responses to LAC 33:V.515. Responses to this regulation will notify the Department

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of ownership of the Facility and the Unit. The submittal must cite the entire regulation and address all requirements. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information as directed by the Department.

**III.C.2. LAC 33:V.531.E and LAC 33:V.2719 Information Submittal**

Within thirty (30) days of issuance of this Order, the Respondent must submit responses to LAC 33:V.531.E and LAC 33:V.2719. The Respondent must respond to LAC 33:V.2719, pursuant to the requirements of LAC 33:V.517.M. This submittal must cite the entire regulation and address all requirements. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department.

**III.C.3. Copies of Post-Closure Notices**

Within thirty (30) days of issuance of this Order, the Respondent must submit copies of Post-Closure Notices, submitted in accordance with and meeting the requirements of LAC 33:V.3525.A and B. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department.

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Within thirty (30) days of issuance of this Order, the Respondent must submit all data and other information relating to groundwater monitoring for the Unit.

The August 31, 2001 Consolidated Permit Renewal Application referenced and included Attachment 24, entitled North Landfarm Groundwater Data. This attachment was not submitted in document form to the Department. The Respondent must submit the complete groundwater monitoring data collected and analyzed for the Unit. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department.

**III.C.5. Post-Closure Care Plan**

Within thirty (30) days of issuance of this Order, the Respondent must submit to the Department for approval a revised Post-Closure Care Plan for the Unit in accordance with LAC 33:V.Chapter 35 and LAC 33:V.2719.C. The Post-Closure Care Plan must include/or reference a Groundwater Sampling and Analysis Plan meeting the applicable requirements of LAC 33:V. Chapter 33 and any additional groundwater protection regulations required for a permitted unit. The Post-Closure Care Plan must include references or steps taken to implement a Detection Monitoring Program in accordance with LAC 33:V.Chapter 33. Six (6) copies must

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be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department.

The Respondent must implement the conditions of the revised Post-Closure Care Plan within sixty (60) days of approval by the Department. Until the revised Post-Closure Care Plan is approved by the Department, the Respondent shall use the existing approved April 1996 Conoco Lake Charles Refinery Revised North Landfarm Closure and Post-Closure Plans (see Attachment 1).

**III.C.6. Detailed Cost Estimate**

The Post-Closure Care Plan must include a detailed and itemized cost estimate covering the costs of post-closure care for the Unit within thirty (30) days of issuance of this Order (see Attachment 1). The cost estimate must be submitted in accordance with LAC 33:V.Chapters 35 and 37 and be approved by the Department. Based on the approved Post-Closure Care Plan submitted as a condition of Section III.C. 5 of the Order, the Respondent may revise the itemized cost estimate at a later date. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department. Once approved, cost estimates shall be maintained by the Respondent in accordance with Condition III.B.12.

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### **III.C.7. Groundwater Sampling and Analysis Plan**

Within thirty (30) days of issuance of this Order, the Respondent must submit to the Department for approval a Groundwater Sampling and Analysis Plan for the Unit in accordance with LAC 33:V.Chapter 33 and any additional groundwater protection regulations required for a permitted unit (see Attachment 1 and Attachment 2). The Post-Closure Care Plan must include references or steps taken to implement detection monitoring in accordance with LAC 33:V.Chapter 33. This plan may be incorporated into the submitted Post-Closure Care Plan for the Unit. Six (6) copies must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313. The Respondent shall address any deficiencies in the information submitted as directed by the Department.

### **III.C.8. Financial Assurance**

The Respondent must submit updated financial assurance for post-closure care and monitoring of the Unit and corrective action (if final remedies have already been selected) within thirty (30) days of the approval of the cost estimate required by Section III.C.6 of the Order (see Attachment 1). The financial assurance must be in accordance with LAC 33:V.Chapter 37. Three (3) copies of financial assurance documentation, including an original or original duplicate (if required, in accordance with the appropriate mechanism), must be submitted to the Office of Environmental Services, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313.

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The Respondent shall address any deficiencies in the information submitted as directed by the Department. Once approved, financial assurance shall be maintained by the Respondent in accordance with Condition III.B.13.

**III.C.9. CAS Notice of Intent**

Within sixty (60) days from the effective date of this Order, the Respondent must submit to the Department a Notice of Intent for the Corrective Action Strategy (CAS). This Notice must be submitted in accordance with Condition II.B.1. of the attached CAS.

**III.C.10. CAS Scoping Meeting**

Within sixty (60) days from the submittal of the CAS Notice of Intent, the Respondent must hold a CAS Scoping Meeting. This meeting must be held in accordance with Condition II.B.2. of the attached CAS.

**III.C.11. Conceptual Site Model**

Within one hundred and twenty (120) days from the CAS Scoping Meeting, the Respondent must submit a Conceptual Site Model to the Department as described in Condition II.D. of the attached CAS.

**III.D. SCOPE OF THE ORDER****III.D.1. Post-Closure Care for the Unit**

The Respondent must comply with all post-closure requirements contained in LAC 33:V.3519 through 3527, including maintenance and monitoring throughout the



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post-closure care period specified in LAC 33:V.3521.A.1 and the Post-Closure Care Plan (see Attachment 1). As required by LAC 33:2719.C, the Respondent must:

**III.D.1.a. Operations**

continue all operations delineated in the Post-Closure Care Plan necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;

**III.D.1.b. Vegetative Cover**

maintain the vegetative cover over closed portions of the Unit in such a manner as not to substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone, and in such a manner as to maintain growth without extensive maintenance;

**III.D.1.c. Run-On Control**

maintain the run-on control system required under LAC 33:V.2703.C.:

**III.D.1.d. Run-Off Management**

maintain the run-off management system required under LAC 33:V.2703.D.;

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**III.D.1.e. Wind Dispersal of Particulate Matter (If Necessary)**

control wind dispersal of particulate matter if required under LAC 33:V.2703.F; and

**III.D.1.f. Crop Prohibitions**

continue to comply with any prohibitions or conditions concerning growth of food-chain crops under LAC 33:V.2709.

**III.D.2. Groundwater Monitoring for the Unit**

The Respondent must comply with all groundwater monitoring requirements contained in LAC 33:V.Chapter 33 and Attachment 2. The Respondent shall maintain and monitor the groundwater monitoring system for the Unit and comply with all other applicable requirements of LAC 33:V.Chapter 33, including the continuation of a Detection Monitoring Program. Requirements are detailed in the Groundwater Monitoring Plan (see Attachment 1 and Attachment 2).

**III.D.3. Security for the Unit**

The Respondent must comply with the security provisions of LAC 33:V.1507, and as delineated in the May 14, 2008, submittal by the Respondent's consultant (see Attachment 1).

**III.D.4. Inspections for the Unit**

The Respondent must follow the inspection requirements of LAC 33:V.1509, and as referenced in the approved Post-Closure Care Plan (see Attachment 1). The

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Respondent must remedy any deterioration or malfunction discovered by an inspection as required by LAC 33:V.1509.C. Records of inspections must be kept as required by LAC 33:V.1509.D. The inspection schedule must include the regulatory requirements of LAC 33:V.517.G, 1509.A and B, and 3523.B.

**III.D.4. Site-Wide Corrective Action**

The Respondent must continue with site-wide corrective action in accordance with LAC 33:V.3322. The Respondent must follow all requirements included in Section III.C. (Schedule of Compliance) of the Order. In addition, the Respondent must follow the guidance contained in the CAS for administrative procedures (see Attachment 3). The requirements for site-wide corrective action include the responsibility of the Respondent to notify the Department of newly identified areas/units and releases.

A summary of the corrective action activities associated with the Facility is provided in Appendix 1 of the attached CAS. AOCs and SWMUs that are currently being managed or proposed for management under a prescribed corrective action program are identified in Table 1 of Appendix 1. The summary shows corrective action activities completed to date and also describes where the Respondent is in the CAS process at the time of issuance of this Order. The applicability of various provisions of the CAS will depend on where the Respondent is in the CAS process.

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### **III.E. FAILURE TO COMPLY**

For any failure to comply with the requirements of this Order or the requirements of the Act or the Department's regulations, the Department reserves the right to seek civil penalties and the right to seek compliance with its rules and regulations in any manner allowed by law, and nothing herein shall be construed to preclude the right to seek such penalties and compliance.

### **III.F. EFFECT OF ORDER**

This **ADMINISTRATIVE ORDER** is effective upon receipt.

Baton Rouge, Louisiana, this \_\_\_\_ day of \_\_\_\_\_, 2008.

\_\_\_\_\_  
DRAFT

Cheryl Sonnier Nolan  
Assistant Secretary  
Office of Environmental Services

### **ATTACHMENTS:**

- 1) LIST OF FACILITY DOCUMENTS INCORPORATED IN THE ORDER BY REFERENCE
- 2) GROUNDWATER PROTECTION
- 3) CORRECTIVE ACTION STRATEGY

# **ATTACHMENT**

# **1**

**ATTACHMENT 1**  
**LIST OF FACILITY DOCUMENTS INCORPORATED**  
**IN THE ORDER BY REFERENCE**  
**LAD990683716-A0-1**  
**AI#2538**

DOCUMENT TYPE	APPLICATION /DOCUMENT DATE	ELECTRONIC DATABASE MANAGEMENT SYSTEM (EDMS) DOCUMENT ID	COMMENTS
Revised Closure and Post-Closure Plans <sup>1</sup> (approved in April 1996 and submitted with Consolidated Permit Renewal Application)	8/31/2001	36990140	
Security Requirements	5/14/2008	36887352	LAC 33:V.517.F, page 5-10
General Inspection Requirements <sup>1</sup>	8/31/2001	36990140	6.1.8 Landfarm Inspection and Maintenance Procedures, page 6-7
Post-Closure Cost Estimate <sup>1</sup>	8/31/2001	36990140	7.3 Post-Closure Costs, page 7-7
Groundwater Sampling and Analysis Plan <sup>1</sup>	8/31/2001	36990140	7.1.1 Groundwater Monitoring and Recordkeeping, page 7-1
Financial Assurance <sup>1</sup>	03/24/2008	3672240 <sup>2</sup>	To be submitted annually thereafter

<sup>1</sup>To be updated per the Schedule of Compliance

<sup>2</sup>This EDMS document is associated with Agency Interest Number (AI#) 2418-ConocoPhillips-Alliance Refinery, located in Chalmette, Louisiana. Financial Assurance for the ConocoPhillips-Lake Charles Refinery (AI# 2538) is contained in the document.

# **ATTACHMENT**

## **2**

**ATTACHMENT 2**  
**(For Administrative Order LAD990683716-AO-1)**

**GROUNDWATER PROTECTION**  
**(Detection Monitoring Program)**

**A. APPLICABILITY**

The regulations of LAC 33:V, Chapters 27, 33, 35, and 37, and Louisiana Hazardous Waste Control Law Revised Statute R.S., 30:2171 of the Environmental Quality Act, R.S., 30:2001 et seq., shall apply to the groundwater protection program for the Unit. All requirements of this attachment must be satisfied and shall apply during the post-closure care period and compliance period, as applicable.

**B. REQUIRED PROGRAM**

**B.1. Current Program**

A Detection Monitoring Program per LAC 33:V.3317 is required for the Unit as hazardous constituents have NOT been detected at the point of compliance. The Respondent must continue to conduct the program as required in this attachment and using the existing monitoring system specified in the Groundwater Sampling and Analysis Plan.

**B.2. Contingency Requirements**

*A groundwater protection standard (LAC 33:V.3305) and compliance period (LAC 33:V.3313) shall only be required if hazardous constituents from the Unit are detected (as defined by LAC 33:V.3303.A.1) in the groundwater at or beyond the point of compliance during the Detection Monitoring Program.*

*B.2.a. A Compliance Monitoring Program shall be required per LAC 33:V.3319 and as subsequently directed by the Department if hazardous constituents are detected.*

*B.2.b. A Corrective Action Program shall be required per LAC 33:V.3321 and as subsequently directed by the Department if the groundwater protection standard is exceeded. If a Corrective Action Program is implemented, the compliance period cannot end until the Respondent demonstrates that the corrective action has been effectively implemented and the groundwater protection standard has not been exceeded for a period of three (3) consecutive years.*



### **C. HAZARDOUS CONSTITUENTS, SAMPLING FREQUENCY AND CONCENTRATION LIMITS**

The wells, hazardous constituents, concentration limits and sampling frequency for the Detection Monitoring Program are delineated in the Groundwater Sampling and Analysis Plan which is attached to the Order.

### **D. POINT OF COMPLIANCE**

The point of compliance (POC) at which the groundwater protection standard applies, and at which monitoring must be conducted, are the vertical intervals intercepted by the wells identified in the Groundwater Sampling and Analysis Plan. The horizontal limit of compliance must be the surface following an imaginary line connecting the risers of the wells. The vertical limit of compliance must be the uppermost aquifer.

### **E. GENERAL REQUIREMENTS**

**E.1.** Any proposed construction and/or abandonment of wells must conform to the standards and guidelines specified in "**CONSTRUCTION OF GEOTECHNICAL BOREHOLES AND GROUNDWATER MONITORING SYSTEMS HANDBOOK**", dated May 1993 ("Construction Handbook", May 1993). This document is printed by and available from the Louisiana Department of Transportation and Development (DOTD), Water Resources Section, P.O. Box 94245, Baton Rouge, Louisiana 70804-9245.

**E.1.a.** A workplan for the construction of any proposed new well must be submitted to the Department for approval as the entire monitoring system must be approved. Any required new well must be installed within thirty (30) days of approval of the workplan by the Department. Upon completion of any new or replacement well, a copy of DOTD-GW-1 S, DOTD Well Registration Short Form, is to be provided to the Department.

**E.1.b.** The Respondent must provide for the sealing of any vertical migration path resulting from any exploratory borings and/or wells as provided in LAC 33:V.3323. A workplan for the proposed plugging and abandonment must be submitted for approval by the Department, whenever such migration pathways are discovered. Upon completion of the abandonment, a copy of DOTD-GW-2, DOTD Well Plugging and Abandonment Form, is to be provide to the Department.

**E.2.** The Respondent must maintain the structural and mechanical integrity and provide protection from accidental damage and surface infiltration for all wells. The Respondent must implement a well inspection schedule and submit a written report to the Department on any damage in accordance with Section III.B.6 of the Order and LAC 33:I.Chapter 39. A well cannot be abandoned unless exempted from the program at a later date by the Department, or unless the integrity of the well is threatened. In such a case, the well must

be replaced in conformance with a workplan approved by the Department (Condition E.1).

E.3. Upgradient wells must always yield groundwater samples from the uppermost water bearing zone that are representative of groundwater that has not been affected by possible leakage from the Unit. Downgradient and vertical point of compliance wells must yield groundwater samples from the water bearing zones that represent the quality of groundwater beneath the Unit that flows to the point of compliance.

E.4. Each well must be measured for total depth and depth to water on the same day and prior to purging. Measurements must be to the nearest 0.1 foot. If 10% of the screened interval is blocked by sediments, the well must be redeveloped prior to the next required sampling event.

E.5. Each well must be purged by evacuation to dryness or by removing a minimum of three casing volumes. The wells must be sampled immediately upon purging and/or when sufficient water for sampling has recharged the well. Other evacuation techniques (e.g., micro-purging) must be approved by the Department prior to use. Purging methods must be consistent throughout the monitoring period.

E.6. Samples must be withdrawn using dedicated or adequately cleaned equipment for each well. No equipment or method may be used that will chemically alter or influence the sample. Sampling devices other than bailers must be approved by the Department prior to use. Care must be taken to avoid placing clean sampling equipment on the ground or on any contaminated surface. Sampling methods and equipment must be compatible throughout the monitoring period.

E.7. Groundwater samples shall be monitored and analyzed for turbidity. Samples containing less than five (5) NTU (nephelometric turbidity unit) are acceptable for analysis when the analytical method is sensitive to turbidity (such as the analysis of metals). Samples containing greater than five (5) NTU are only acceptable when well development is certified by a qualified geologist as "the best obtainable". An evaluation of turbidity must accompany all potentially affected analytical values.

E.8. Standard indicators (e.g., specific conductance, pH, etc.) must be measured as specified in the Groundwater Sampling and Analysis Plan and will be used to indicate well integrity and possible groundwater contamination.

E.9. A chain of custody protocol must be employed that will allow for tracking possession and handling of samples from the time of collection through laboratory analysis. All sample containers must be labeled to prevent misidentification, have proper seals, and indicate the required analytical tests.

E.10. Sample preservation, handling and analysis must meet of the specifications of LAC 33:V.3315.D and 3315.E and Test Methods for Evaluating Solid Waste Physical/Chemical Methods 3rd. Edition (EPA Publication Number SW-846, as

amended) or an equivalent substitute (approved by the Department prior to implementation). Containers, preservation methods and analytical limits shall be specified in the Groundwater Sampling and Analysis Plan.

**E.11.** The Respondent must use one of the statistical procedures outlined in the Groundwater Sampling and Analysis Plan or LAC 33:V.3315.H in determining whether background values or concentrations have been exceeded for the hazardous constituents.

**E.12.** Records of all sampling and analytical work must be maintained at the site during the life of the Unit, including the post-closure care period. An up-to-date field log book (or compilation of field sheets) must be kept at the site which documents, as a minimum, the following for each sample:

- E.12.a.** well identification number;
- E.12.b.** total well depth;
- E.12.c.** elevation of top of casing;
- E.12.d.** water elevations;
- E.12.e.** calculations of the standing water volume in the well;
- E.12.f.** water color (visual) and odor;
- E.12.g.** field measurements and methods (pH, specific conductance, etc.);
- E.12.h.** well evacuation procedures and equipment;
- E.12.i.** total volume of water evacuated;
- E.12.j.** sample withdrawal procedures and equipment;
- E.12.k.** name of collector, sample date and time;
- E.12.l.** sample identification numbers; and
- E.12.m.** other field observations.

## **F. DETECTION MONITORING PROGRAM**

The Respondent must continue or expand the Detection Monitoring Program in accordance with the requirements of LAC 33:V.3317 and as subsequently directed by the Department until one of the following occurs: 1) the post-closure monitoring period has ended; or 2) a Compliance Monitoring Program and/or Corrective Action Program is required and the Order is modified accordingly.

**F.1.** The Respondent must utilize the monitoring system outlined in the Groundwater Sampling and Analysis Plan and as required by LAC 33:V.3315 to monitor for indicator parameters (e.g., pH, specific conductance, etc.), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents.

**F.2.** The Respondent shall sample the monitoring system according to the schedule specified in the Groundwater Sampling and Analysis Plan.

**F.3.** The Respondent must determine whether there is statistically significant evidence of contamination for any indicator parameter or hazardous constituent specified in the

Groundwater Sampling and Analysis Plan. Statistical methods shall conform to Condition E.11.

**F.4.** Within forty-five (45) days after the sampling event, the Respondent shall have complete analytical results and shall have determined whether there is statistically significant evidence of contamination for any indicator parameter or hazardous constituent. In doing so, the Respondent shall compile a report containing the test results, the statistical comparative data, groundwater potentiometric maps, graphs, copies of the field log book notes and chain of custody where appropriate. This information shall be maintained at the site as provided in Condition E.12 and reported to the Department in accordance with Condition G. Statistically significant evidence of contamination must be forwarded for review by the Department in accordance with Condition F.5.

**F.5.** If the Respondent determines that there is statistically significant evidence of contamination for indicator parameters or hazardous constituents at any point of compliance well, the Respondent must do the following:

**F.5.a.** Notify the Department of this finding in writing within seven (7) days. This notification must indicate what indicator parameters or hazardous constituents have shown statistically significant evidence of contamination.

**F.5.b.** Immediately sample the groundwater in all point of compliance wells and determine whether constituents listed in LAC 33:V.3325, Table 4 are present, and if so, in what concentrations. This sampling shall be conducted within seven (7) days of the determination that there is statistically significant evidence of contamination, unless written approval of a different timeframe is given by the Department. Within forty-five (45) days after the sampling event, the Respondent shall submit a report to the Department detailing whether there is statistically significant evidence of contamination for any constituent, and should indicate whether the Respondent intends on resampling for any of the constituents pursuant to Condition F.5.c. The report shall contain the test results, the statistical comparative data, groundwater potentiometric maps, graphs, copies of the field log book notes and chain of custody where appropriate.

**F.5.c.** For any LAC 33:V.3325, Table 4 constituent found in the analysis pursuant to Condition F.5.b above, the Respondent may resample within one month of the report submittal to the Department and repeat the analysis for those constituents detected. Within forty-five (45) days after the sampling event, the Respondent shall submit a report to the Department detailing whether there is statistically significant evidence of contamination for any constituent. The report shall contain the test results, the statistical comparative data, groundwater potentiometric maps, graphs, copies of the field log book notes and chain of custody where appropriate.

**F.5.c.i.** If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring.

**F.5.c.ii.** If the Respondent does not resample for the constituents found pursuant to Condition F.5.b above, the constituents found during this initial analysis will form the basis for compliance monitoring.

**F.5.d.** Submit to the Department within ninety (90) days an application to establish a Compliance Monitoring Program. The application must include:

**F.5.d.i.** An identification of the concentration of any LAC 33:V. 3325, Table 4 constituent detected in the groundwater at each point of compliance well;

**F.5.d.ii.** Any proposed changes to the monitoring system necessary to meet the requirements of a Compliance Monitoring Program per LAC 33:V.3319;

**F.5.d.iii.** Any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical methods necessary to meet the requirements of a Compliance Monitoring Program per LAC 33:V.3319; and

**F.5.d.iv.** For each hazardous constituent detected (as defined in LAC 33:V.3301.A.1) at the point of compliance, a proposed concentration limit under LAC 33:V.3309, or a notice of intent to seek an alternate concentration limit under LAC 33:V.3309.B. (All data necessary to justify an alternate concentration limit sought under LAC 33:V.3309.B must be submitted by the Respondent to the Department within 180 days from the date of the confirmation of contamination).

**F.5.e.** Submit to the Department within 180 days an Engineering Feasibility Plan for a Corrective Action Program necessary to meet the requirement of LAC 33:V.3321. The plan will not be required if:

**F.5.e.i.** all hazardous constituents identified under Condition F.5.b are listed in LAC 33:V.3309.A.3, Table 1, and their concentrations do not exceed the respective values given in that table; or

**F.5.e.ii.** the Respondent has sought an alternate concentration limit under LAC 33:V.3309.B for every hazardous constituent identified under Condition F.5.b.

**F.5.f.** If the Respondent determines that there is a statistically significant difference for indicator parameters or hazardous constituents at any point of compliance well identified under Condition F.3, the Respondent may demonstrate that a source other than the Unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or

natural variation in the groundwater. The Respondent may make a demonstration under this condition in addition to, or in lieu of, submitting an application under Condition F.5.d; however, the Respondent is not relieved of the requirement to submit an application within the specified timeframe unless the demonstration made under this condition is successful. In making a demonstration under this condition the Respondent must:

**F.5.f.i.** Notify the Department in writing within seven (7) days of determining statistically significant evidence of contamination that the Respondent intends to make a demonstration under this condition;

**F.5.f.ii.** Within ninety (90) days, submit a report to the Department that demonstrates that a source other than the Unit caused the contamination or that the contamination resulted from error in sampling, analysis, or evaluation;

**F.5.f.iii.** Within ninety (90) days, submit to the Department an application to make any appropriate changes to the Detection Monitoring Program; and

**F.5.f.iv.** Continue to monitor in accordance with the established Detection Monitoring Program.

**F.6.** If the Respondent determines that the Detection Monitoring Program no longer satisfies the requirements of the Order, the Respondent, within ninety (90) days, shall submit an application for a modification to make any appropriate changes. Any time the Department determines that the Detection Monitoring Program does not satisfy the requirements of the Order, the Respondent shall, within ninety (90) days of notification of such determination, submit an application for a modification to make any appropriate changes.

## **G. REPORTING AND NOTIFICATION REQUIREMENTS**

### **G.1. Semi-Annual Groundwater Report**

A semi-annual groundwater report for each six-month period of January through June must be submitted to the Department no later than September 1<sup>st</sup> of the same calendar year. The report shall include the following:

**G.1.a.** a general discussion on sampling, analytical, statistical and QA/QC procedures;

**G.1.b.** a table showing well number, well depth, interval screened, zone monitored, well diameter, screen and casing material for all wells associated with the Unit;

**G.1.c.** a facility map showing all wells associated with the Unit and identifying zones in which wells are screened;

**G.1.d.** a scaled potentiometric surface map showing well locations, groundwater elevations with respect to mean sea level for each monitored zone;

**G.1.e.** documentation of the chain of custody of all sampling and analyses;

**G.1.f.** all analytical data, including QA/QC;

**G.1.g.** a tabular summary of all analytical data;

**G.1.h.** a statistical method shall be used in evaluating data for each required indicator parameter (e.g., pH, specific conductance, etc.) and hazardous constituent, as approved by the Department;

**G.1.i.** tables and graphical representation of the values of the required indicator parameters and the hazardous constituents including:

**G.1.i.i.** contaminant concentration isopleth maps;

**G.1.i.ii.** contaminant concentration versus time graphs;

**G.1.j.** a statement of whether a statistically significant difference in concentration is detected;

**G.1.k.** a discussion of any significant changes in the data from the last reporting period;

**G.1.l.** a discussion of inspections and maintenance of the monitoring system, physical condition of the wells, including down time for any well or part of the system and actions taken to return the system to normal operations and maximum efficiency;

**G.1.m.** a discussion of water-quality properties (i.e., color, odor, etc.);

**G.1.n.** disposition of purge water and other potentially contaminated materials; and

**G.1.o.** evaluation of the effectiveness and progress of any corrective action, if applicable.

## **G.2. Annual Groundwater Report**

An annual groundwater report must be submitted to the Department no later than March 1<sup>st</sup> of the following calendar year as required by LAC 33:V.1529.D.8.

**G.2.a.** The report must contain the reporting requirements of Condition G.1 for the six-month period of July through December.

**G.2.b.** In addition, the report must summarize and interpret all groundwater activities for the preceding calendar year including an evaluation of the monitoring strategy in relation to the direction of groundwater flow and locations of wells associated with the Unit. Applicable calculations must also include groundwater flow rates, contaminant migration rates (as applicable), statistical comparisons, trend analyses, and any other pertinent information regarding the adequacy of the monitoring system.

### **G.3. Notification of Release to SPOC**

In the event of a release in, into, within, or on any groundwaters of the state, (i.e., any confirmation of contamination in any previously uncontaminated saturated subsurface strata) the Respondent must notify the Department within twenty-four (24) hours of confirming statistically significant evidence of a release. Notification shall be made to the Office of Environmental Compliance, Emergency and Radiological Services Division, Single Point of Contact (SPOC) in accordance with LAC 33:309.L.7 and Section III.B.6 of the Order. This requirement is in addition to notification requirements to the Department discussed in Condition F.



# **ATTACHMENT**

## **3**

**ATTACHMENT 3**  
**(For Administrative Order LAD990683716-AO-1)**

**CORRECTIVE ACTION STRATEGY (CAS)**

**I. GENERAL CONDITIONS**

**I.A. Information Submittal for the Corrective Action Strategy**

The Respondent shall ensure that all plans, reports, notifications, and other submissions to the Department required by this Corrective Action Strategy (CAS) document are signed and certified in accordance with LAC 33:V.Chapter 5, Subchapter B. All submittals required under the CAS must conform to those requirements outlined in the Risk Evaluation Corrective Action Program (RECAP) (see Condition II below). Variance from content and/or formatting guidelines provided under the RECAP shall be requested by the Respondent prior to submittal to the Department, as deemed necessary. Approval or disapproval of such a request with further guidance on content and formatting will be provided by the Department, as deemed necessary. Five (5) copies each of these plans, reports, notifications or other submissions and one (1) electronic copy (3.5" IBM compatible disk or CD-ROM) of all portions thereof which are in word processing format shall be submitted to the Department by Certified Mail or hand delivered to:

**Louisiana Department of Environmental Quality  
Office of Environmental Services  
Waste Permits Division  
P.O. Box 4313  
Baton Rouge, LA 70821-4313**

A summary of the planned reporting milestones pursuant to the CAS document is found in Table 1 of the CAS document.

**I.B. Data Retention**

All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to the CAS shall be maintained at the facility during the term of the Order, including any amended Orders.

**I.C. Management of Wastes**

All solid wastes which are managed pursuant to a remedial measure taken under the CAS or as an interim measure addressing a release or the threat of a release from a solid waste management unit (SWMU) shall be managed in a manner protective of human health and the environment and in compliance with all applicable Federal,

State and local requirements. As a response to the Louisiana legislature mandate La. R.S. 30:2272 (Act 1092 of the 1995 Regular Session) to develop minimum remediation standards, the DEPARTMENT promulgated the Risk Evaluation Corrective Action Program (RECAP). RECAP's tiered approach to risk evaluation and corrective action establishes not only across the board numerical standards for most media, but also allows for the development of more site-specific numerical standards, as warranted. The Respondent is required to comply with all applicable requirements of RECAP. Approval of units for managing wastes and conditions for operating the units shall be granted through the corrective action process.

## II. SPECIAL CONDITIONS PURSUANT TO CAS

Corrective Action for Releases: Section 3004(u) of RCRA, as amended by the Hazardous and Solid Waste Amendments (HSWA), and LAC 33:V.3322 require that permits issued after November 8, 1984, address corrective action for releases of hazardous waste or hazardous constituents from any SWMU at the facility, regardless of when the waste was placed in the unit. Enforceable documents may be issued in lieu of post-closure permits; however, LAC 33:V.4396 and LAC 33:V.305.H requires that these enforceable documents meet the requirements of LAC 33:V.3322.

The United States Environmental Protection Agency's (EPA's) traditional RCRA corrective action approach is structured around several elements common to most activities. In the first phase, RCRA facility assessment (RFA), EPA or the authorized state assesses the facility to identify releases and determine the need for corrective action. In the second phase, RCRA facility investigation (RFI), the facility conducts a more detailed investigation to determine the nature and extent of contaminants released to groundwater, surface water, air, and soil. If remedial action is needed, a third phase, corrective measures study (CMS), is started. During this phase, the facility conducts a study, which when completed, describes the advantages, disadvantages, and costs of various cleanup options. After selection of a final remedy, the fourth phase, corrective measures implementation (CMI), is initiated. The facility is required to design, construct, operate, maintain, and monitor the final remedy(s).

The CAS is an alternate corrective action approach that can be implemented during any phase of corrective action for a release area. The Respondent shall use the CAS as the framework for corrective action to clarify, facilitate and expedite the process, and shall use RECAP for screening and media-specific cleanup standards. EPA has interpreted the term "release" to mean, "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." (50 FR 2873, July 15, 1985). The CAS refers to "release areas" as solid waste management units (SWMUs) and areas of concern (AOCs) while the RECAP refers to release areas as areas of investigation (AOIs). SWMUs and AOCs may also be referred to as "AOIs" when investigated and managed under the RECAP.

## II.A. ALTERNATE CORRECTIVE ACTION

### II.A.1. Introduction to CAS

The Order will utilize the CAS Guidance Document ([www.epa.gov/Arkansas/6pd/rcra\\_c/pd-o/riskman.htm](http://www.epa.gov/Arkansas/6pd/rcra_c/pd-o/riskman.htm)) developed by the EPA Region 6, whenever the Department determines that it will serve to facilitate the corrective action. The CAS Guidance Document shall be utilized to the fullest extent practicable for planning and implementation of the corrective action. This CAS document shall not supersede existing Federal, State, and local regulations. The two primary objectives are to prioritize corrective action at the facility, and streamline corrective action administrative procedures, resulting in the protection of human health and the environment.

The CAS is a performance-based approach; using data quality objectives, investigations begin with the endpoint in mind. The CAS is a risk management strategy that can be implemented during any phase of corrective action. However, the CAS need not be applied to work that has already been completed to the satisfaction of the Department. Performance standards are established at the beginning of the corrective action process, allowing earlier and more focused implementation. Releases are screened using RECAP screening numbers to determine the priority of corrective action, and remedial alternatives are selected on the basis of their ability to achieve and maintain the established performance standards.

There is no one specific path through the CAS process. The CAS is a facility-wide approach, focusing corrective action on releases that pose the greatest risk first. Screening releases will also enable some areas of interest to qualify for no further action at this time (Condition II.A.3.a. of the CAS document), thus resources can be used to best benefit the protection of human health and the environment. The CAS process also considers activities previously conducted under the traditional corrective action process. Appendix 1 of this CAS document contains a summary of corrective action activities completed to date and also describes where the Respondent is in the CAS process at the time of issuance of the Order. The applicability of various provisions of the CAS will depend on where the Respondent is in the CAS process as detailed in Appendix 1.

The traditional RCRA corrective action process and reports (i.e., RFIs, CMSs, CMIs, etc.) are not elements of the CAS. However, the use of information and reports from the traditional corrective action process, if available, is encouraged, in addition to new site-specific information.

The Department, through an agency-initiated modification of the Order, may remove the CAS as the means of facility-wide corrective action in the case of the failure of the Respondent to disclose information, abide by the terms and conditions of the Order, adhere to agreed schedules, or show adequate progress; or should an impasse occur between the Respondent and the Department. The Department will institute

other means of corrective action (such as traditional corrective action) at the facility through modification of the Order.

## **II.A.2. Performance Standards**

Expectations for the outcome of corrective action at a facility are established in the CAS by three performance standards as defined in Conditions II.A.2.a through c. The Respondent's proposed performance standards shall be presented during the scoping meeting. The Respondent must justify the proposed performance standards through evaluation and documentation of land use, ground water designation (current and reasonably expected future use), types of receptors present, exposure pathways, etc.; as described in RECAP, Chapter 2. Through the application of the performance standards and RECAP, the Respondent and Department shall determine whether a release must be addressed through corrective action, and whether implemented corrective actions are protective of human health and the environment.

The Respondent shall submit the performance standards in writing along with the Conceptual Site Model (Condition II.D) within one-hundred and twenty (120) days after the scoping meeting. The Department may either approve the performance standards proposed by the Respondent or establish performance standards that the Department deems necessary to protect human health and the environment.

The three CAS performance standards are defined below. The order in which the performance standards are listed does not indicate that one performance standard takes priority over another. All applicable performance standards must be achieved by the Respondent.

### **II.A.2.a. Source Control Performance Standard**

Source control refers to the control of materials that include or contain hazardous wastes or hazardous constituents that act as a reservoir for migration of contamination to soil, sediment, ground water, surface water, or air, or as a source for direct exposure.

The facility must determine if source material is present. Removal, containment, treatment, or a combination of the three, must be evaluated on a case-by-case basis. Controlling source material is a predominating issue in the CAS, and must be addressed to ensure protectiveness over time. Prioritization of the SWMUs and AOCs does not mean avoidance of controlling source materials.

### **II.A.2.b. Statutory and Regulatory Performance Standard**

Applicable statutory and regulatory requirements (Federal, State, and local) must be identified. These requirements may dictate media-specific contaminant levels (e.g., maximum contaminant levels (MCLs) in drinking

water) that must be achieved and may become a performance standard for the Respondent.

#### **II.A.2.c. Final Risk Goal Performance Standard**

The final risk goal is the level of protection to be achieved and maintained by the Respondent. The final risk goal shall be based on site-specific issues including land use, special subpopulations, contaminant concentrations based on acceptable risk, location at which the levels are measured, and the remediation time frame, as specified by RECAP.

One final risk goal may apply to the entire facility, but it is more likely that different releases will require different final risk goals due to variations in location of releases, land use, proximity of receptors, etc. The final risk goal will be based on sound risk assessment methodologies (Condition II.A.3).

#### **II.A.3. Use of RECAP**

The latest edition of the RECAP document shall be used by the Respondent to determine the need for further corrective actions under the Order. The RECAP consists of a tiered framework comprised of a Screening Option (SO), and three Management Options (MO). The tiered management options allow site evaluation and corrective action efforts to be tailored to site conditions and risks. As the MO level increases, the approach becomes more site-specific and hence, the level of effort required to meet the objectives of the Option increases.

The RECAP shall be used by the Respondent to evaluate data quality and data usability (RECAP Section 2.4 and 2.5), to determine the identity of an AOI as described in RECAP Section 2.6, and for estimations of Area of Investigation Concentrations and Groundwater Compliance Concentrations for each media as defined in RECAP Section 2.8.

The RECAP shall be used by the Respondent to evaluate land use as described in RECAP Section 2.9, and groundwater/aquifer use as described in RECAP Section 2.10.

The RECAP shall be used by the Respondent to prioritize AOCs, SWMUs, and AOIs that require remediation so site investigations are focused on the release areas that pose the greatest risk. As the CSM is compiled, the Respondent shall assess historical data (RECAP Section 2.5) and use the following management options, as appropriate, to address each release site.

##### **II.A.3.a. Screening Option**

The Respondent shall use the Screening Standards (SS) which are screening numbers derived by the Department for soil and groundwater for non-industrial and industrial land use scenarios. The SS shall be used to

demonstrate that an AOI does not pose a threat to human health and the environment and, hence does not require further action at this time (NFA-ATT) or that further evaluation is warranted under a higher Management Option.

#### **II.A.3.b. Management Option 1**

The Respondent shall use Management Option 1 (MO-1) which provides a RECAP standard (RS) derived for non-industrial and industrial exposure scenarios using currently recommended default exposure parameters and toxicity values. Under MO-1, an AOI may warrant a NFA-ATT determination, or if an exposure, source, or compliance concentration detected at the AOI exceeds a MO-1 limiting RS, then the Respondent may; (1) remediate to the MO-1 limiting RS (and comply with closure/post closure requirements for MO-1), or (2) proceed with a MO-2 or MO-3 evaluation.

#### **II.A.3.c. Management Option 2**

The Respondent shall use Management Option 2 (MO-2) which provides for the development of soil and groundwater RS using site-specific data with specified analytical models to evaluate constituent fate and transport at the AOI. The results of this evaluation shall be used in conjunction with standard reasonable maximum exposure (RME) assumptions to identify site-specific MO-2 RS. Under MO-2, an AOI may warrant a NFA-ATT determination, or if an exposure, source, or compliance concentration detected at the AOI exceeds a MO-2 limiting RS, then the Respondent may; (1) remediate to the MO-2 limiting RS (and comply with closure/post closure requirements for MO-2), or (2) proceed with a MO-3 evaluation.

#### **II.A.3.d. Management Option 3**

The Respondent shall use Management Option 3 (MO-3) which provides the option of using site-specific data for the evaluation of exposure and the evaluation of environmental fate and transport at the AOI. The results of the site-specific evaluation may be to develop site-specific MO-3 RS. Under MO-3, an AOI may warrant a NFA-ATT determination, or if an exposure, source, or compliance concentration detected at the AOI exceeds a MO-3 limiting RS, then the Respondent shall; (1) remediate to the MO-3 RS, (2) conduct confirmatory sampling, and (3) comply with closure/post closure requirements for MO-3.

#### **II.A.4. Corrective Action for Releases Beyond Facility Boundary**

Section 3004(v) of RCRA as amended by HSWA, and State regulations promulgated as LAC 33:V.3322.C require corrective action beyond the facility property boundary, where necessary to protect human health and the environment, unless the Respondent demonstrates that, despite the Respondent's best efforts, the Respondent was unable

to obtain the necessary permission to undertake such action. The Respondent is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied.

#### **II.A.5. Financial Responsibility**

Assurances of financial responsibility for corrective action shall be provided by the Respondent as specified in the Order following remedy selection. Financial responsibility requirements and the corresponding cost estimates will be dependent on the remedy selection(s).

#### **II.A.6. Summary of Corrective Action Activities**

A summary of the corrective action activities associated with the facility is provided in Appendix 1 of this CAS document. AOCs and SWMUs that are currently being managed or proposed for management under a prescribed corrective action program (e.g., groundwater order, corrective action order, CERCLA) are identified in Appendix 1, Table 1, of this CAS document.

#### **II.A.7. Approval of Alternate Schedule**

The Respondent may submit a written request for an alternate schedule for a submittal deadline as presented in Condition II, Table 1. The request should propose a specific alternate schedule and include an explanation as to why the alternate schedule is necessary. The Department will consider site-specific criteria in either approving or disapproving the request for an alternate schedule.

### **II.B. PROJECT DEVELOPMENT AND SCOPING MEETING**

#### **II.B.1. Notice of Intent**

The Respondent shall submit to the Department a Notice of Intent to conduct corrective action using the CAS within sixty (60) days of the issuance of the Order. The notice of intent should state the following in a concise manner:

**II.B.1.a.** General information regarding facility location;

**II.B.1.b.** General information regarding the facility's operational history;

**II.B.1.c.** General discussion on how the Respondent will proceed through the CAS;

**II.B.1.d.** Brief description of proposed performance standards for corrective action; and



**II.B.1.e.** Propose a date for a scoping meeting between the Respondent and the Department to be held within sixty (60) days of the date of the Notice of Intent.

## **II.B.2. Scoping Meeting**

The scoping meeting will serve as the first CAS milestone where the Respondent and the Department identify expectations concerning CAS implementation. The length and extent of the meeting will depend on the complexity of the site. Agreements on land use, groundwater classification, the level of detail required in the conceptual site model (see Condition II.D) and expectations for remediation goals will be discussed during the scoping meeting(s). During the scoping meeting the Respondent will present the following information to the Department:

**II.B.2.a.** A conceptual site model (if one already has been developed);

**II.B.2.b.** Discussions on history of corrective action at the facility, including facility investigations, risk evaluations or risk assessments, interim measure/stabilizations and final remedies implemented;

**II.B.2.c.** Proposed performance standards for the facility with justification, and potential risk management approaches;

**II.B.2.d.** Discussions on how the Respondent plans to use the CAS to meet its corrective action obligations, including permitting and compliance issues;

**II.B.2.e.** A Communication Strategy Plan that specifies where in the CAS process the Respondent is currently and how the Respondent will provide information about future progress at the facility to the Department (i.e., progress reports, conference calls, routine meetings, etc.);

**II.B.2.f.** Site-specific concerns (i.e., sensitive environments or special subpopulations);

**II.B.2.g.** Need for interim measures or stabilization activities, if necessary; and

**II.B.2.h.** Schedule for submittal of the CAS Investigation Workplan and proposed schedule for conducting and completing CAS requirements, including public participation.

Information plans and reports that have already been developed by the Respondent during the corrective action process can be referenced during the scoping meeting. The Respondent must coordinate with the Department in order to determine the date, time, and location of the scoping meeting.

## **II.C. REPORTING REQUIREMENTS**

**II.C.1.** The Respondent shall submit, in accordance with Condition I.A., signed reports of all activities conducted pursuant to the provisions of the CAS as required by the Department. The reporting schedule shall be determined on a case-by-case basis by the Department. These reports shall contain, as applicable to the stage of corrective action, the information required by CAS, as well as the following:

**II.C.1.a.** A description of the work completed and an estimate of the percentage of work completed;

**II.C.1.b.** Summaries of all findings, including summaries of laboratory data;

**II.C.1.c.** Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;

**II.C.1.d.** Projected work for the next reporting period;

**II.C.1.e.** Summaries of contacts pertaining to corrective action or environmental matters with representatives of the local community, public interest groups or State government during the reporting period;

**II.C.1.f.** Changes in key project personnel during the reporting period; and

**II.C.1.g.** Summaries of all changes made in implementation during the reporting period.

**II.C.2.** Copies of other reports relating to or having bearing upon the corrective action work (e.g., inspection reports, drilling logs and laboratory data) shall be made available to the Department upon request.

**II.C.3.** In addition to the written reports as required in Condition II.C.1 and II.C.2 above, at the request of the Department, the Respondent shall provide status review through briefings with the Department.

**II.C.4.** The determination and approval of remedy selections, schedules of submittals and minor changes to any corrective action workplans may be made by the Department during the scoping meeting or status review briefings as described in Condition II.C.3.

## **II.D. SPECIFIC CONDITION – CONCEPTUAL SITE MODEL (CSM)**

Within 120 days after the scoping meeting, the Respondent shall submit to the Department a CSM (along with the Performance Standards detailed in Condition II.A.2) or an update of any CSM submitted at the scoping meeting providing background information and the current conditions at the facility. The level of detail required for the CSM will be discussed during the scoping meeting. At a minimum, the CSM must address current site conditions,

land use, known and/or potential constituent source(s), routes of constituent migration, exposure media (i.e., soil, surface waters, groundwater), exposure points, points of compliance and pathways, receptors and source media to be evaluated under the RECAP. The CSM must include a completed Figure 8 (LAC 33:I.Chapter 13). The Respondent may include completed investigations, existing data, or previously submitted documents in the CSM by reference. References must include the names, dates, and brief summaries of the documents.

If a CSM has been previously developed, the scoping meeting will also provide the opportunity for the Respondent and Department to consider and identify all data gaps in the CSM. The initial CSM shall be considered the "base document" to be prepared and updated by the facility as new information is gathered during investigations. The CSM shall be used by the facility to make decisions regarding risk management options, ecological risk, and monitored natural attenuation determinations (RECAP Section 2.16), or technical impracticability (TI) waiver determinations, when appropriate.

The Department reserves the right to require revisions to the CSM based upon data resulting from ongoing investigations and activities. Revisions to the CSM may also be required for newly identified SWMUs or AOCs according to Condition II.L (See Appendix 1, Ongoing Corrective Action) and based on new information and information not previously considered by the Department.

The CSM shall be divided into Profiles as detailed in Conditions II.D.1 through 6. If the Respondent chooses to use existing data and documents in the CSM, it may not be necessary to prepare the Profiles as detailed in Conditions II.D.1 through 6. However, the existing documents and data must provide sufficient information and detail which corresponds to the information required by the Facility, Land Use and Exposure, Physical, Release, Ecological, and Risk Management Profiles.

#### **II.D.1. Facility Profile**

The Respondent shall include in the CSM a Facility Profile which shall summarize the regional location, pertinent boundary features, general facility structures, process areas, and locations of solid waste management units or other potential sources of contaminant migration from the routine and systematic releases of hazardous constituents to the environment (e.g., truck or railcar loading/unloading areas). The Respondent shall also include historical features that may be potential release areas because of past management practices. The Facility Profile shall include:

**II.D.1.a.** Map(s) and other documents depicting the following information (all maps shall be consistent with the requirements set forth in LAC 33:V.Chapter 5 and be of sufficient detail and accuracy to locate and report all current site conditions):

**II.D.1.a.(1)** General geographic location;

**II.D.1.a.(2)** Property lines with the owners of all adjacent property clearly indicated;

**II.D.1.a.(3)** Facility structures, process areas and maintenance areas;

**II.D.1.a.(4)** Any other potential release areas shall be delineated, such as railcar loading/unloading areas or any other AOI as described in RECAP Section 2.6; and

**II.D.1.a.(5)** Locations of historical features that may be potential release areas or any areas of past solid and hazardous waste generation, treatment, storage or disposal activities.

**II.D.1.b.** The Facility Profile shall also include a description of ownership and operation of the facility.

**II.D.1.c.** The Respondent shall provide pertinent information for those spills that have not been assessed and reported to the Department during facility investigations, addressed by facility spill contingency plans, or previously remediated or deemed for no further action. The information must include at minimum, approximate dates or periods of past waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, federal, or private party response units), including any inspection reports or technical reports generated as a result of the response.

## **II.D.2. Land Use and Exposure Profile**

The Respondent shall include in the CSM a Land Use and Exposure Profile which includes surrounding land uses (industrial and non-industrial, as described in RECAP Sections 2.9.1 and 2.9.2), resource use locations (water supply wells, surface water intakes, etc.), beneficial resource determinations (groundwater classifications as described in RECAP Section 2.10), natural resources (wetlands, etc.), sensitive subpopulation types and locations (schools, hospitals, nursing homes, day care centers, etc.), applicable exposure scenarios, and applicable exposure pathways identifying the specific sources, releases, migration mechanisms, exposure media, exposure routes and receptors. The Land Use and Exposure Profile shall include:

**II.D.2.a.** Map(s) and other documents depicting the following information (all maps shall be consistent with the requirements set forth in LAC 33:V.Chapter 5 and be of sufficient detail and accuracy to locate and report all current site conditions):

**II.D.2.a.(1)** Surrounding land uses, resource use locations, and natural resources/wetlands;

**II.D.2.a.(2)** Locations of sensitive subpopulations; and

**II.D.2.a.(3)** An exposure pathway flowchart which outlines sources, migration pathways, exposure media and potential receptors as depicted in Figure 8 (CMS example) of the RECAP.

### **II.D.3. Physical Profile**

The Respondent shall include in the CSM a Physical Profile which shall describe the factors that may affect releases, fate and transport, and receptors, including; topography, surface water features, geology, and hydrogeology. The Physical Profile shall include:

**II.D.3.a.** Map(s) and other documents depicting the following information (all maps shall be consistent with the requirements set forth in LAC 33:V.Chapter 5 and be of sufficient detail and accuracy to locate and report all current site conditions):

**II.D.3.a.(1)** Topographic maps with a contour interval of five (5) or ten (10) feet, a scale of one inch to 100 feet (1:100), including hills, gradients, and surface vegetation or pavement;

**II.D.3.a.(2)** Surface water features including routes of all drainage ditches, waterways, direction of flow, and how they migrate to other surface water bodies such as canals and lakes;

**II.D.3.a.(3)** Regional geology including faulting and recharge areas, as well as local geology depicting surface features such as soil types, outcrops, faulting, and other surface features;

**II.D.3.a.(4)** Subsurface geology including stratigraphy, continuity (locations of facies changes, if known), faulting and other characteristics;

**II.D.3.a.(5)** Maps with hydrogeologic information identifying water-bearing zones, hydrologic parameters such as transmissivity, and conductivity. Also locations and thicknesses of aquitards or impermeable strata; and

**II.D.3.a.(6)** Locations of soil borings and production and groundwater monitoring wells, including well log information, and construction of cross-sections which correlate substrata. Wells shall be clearly labeled with ground and top of casing elevations (can be applied as an attachment).

#### **II.D.4. Release Profile**

The Respondent shall include in the CSM a Release Profile which shall describe the known extent of contaminants in the environment, including sources, contaminants of concern (COC), areas of investigations, distribution and magnitude of known COCs with corresponding sampling locations, and results of fate and transport modeling depicting potential future extent/magnitude of COCs. The Release Profile shall include:

**II.D.4.a.** Map(s) and other documents depicting the following information (all maps shall be consistent with the requirements set forth in LAC 33:V.Chapter 5 and be of sufficient detail and accuracy to locate and report all current site conditions):

**II.D.4.a.(1)** Estimations of source concentrations, exposure concentrations and compliance concentrations for each affected media as defined in Section 2.8 of RECAP;

**II.D.4.a.(2)** Isopleth maps depicting lateral extent and concentrations of COCs;

**II.D.4.a.(3)** Results of fate and transport modeling showing potential exposure concentrations and locations; and

**II.D.4.a.(4)** Locations of potential sources including past or present waste units or disposal areas and all SWMUs/AOCs.

**II.D.4.b.** Table(s) depicting the following information for each SWMU/AOC, including but not limited to: location; type of unit/disposal/release area; design features; operating practices (past and present); period of operation; age of unit/disposal/release area; general physical condition; and method of closure.

**II.D.4.c.** Table(s) depicting the following waste/contaminant characteristics for those areas referenced in Condition II.D.4.b, including but not limited to: type of waste placed in the unit (hazardous classification, quantity, chemical composition), physical and chemical characteristics (physical form, description, temperature, pH, general chemical class, molecular weight, density, boiling point, viscosity, solubility in water, solubility in solvents, cohesiveness, vapor pressure); and migration and dispersal characteristics of the waste (sorption coefficients, biodegradability, photodegradation rates, hydrolysis rates, chemical transformations).

#### **II.D.5. Ecological Profile**

The Respondent shall include in the CSM an Ecological Profile that shall describe the physical relationship between the developed and undeveloped portions of the facility, the use and level of disturbance of the undeveloped property, and the type of

ecological receptors present in relation to completed exposure pathways. When compiling data for the Ecological Profile, current, as well as, future impacts to receptors and/or their habitats shall be considered. The Ecological Profile shall include:

**II.D.5.a.** A history and description of the developed property on the facility, including structures, process areas, waste management units, and property boundaries;

**II.D.5.b.** A history and description of the undeveloped property, including habitat type (wetland, grassy area, forest, ponds, etc.). Include a description of the primary use, degree and nature of any disturbance, along with proximity to drainage ditches, waterways and landfill areas;

**II.D.5.c.** A description of the site receptors in relation to habitat type, including endangered or protected species, mammals, birds, fish, etc.;

**II.D.5.d.** A description of the relationship between release areas and habitat areas, specifically relating chemicals of potential ecological concern (COEC) to ecological receptors;

**II.D.5.e.** An ecological checklist as described in Section 7.0 of RECAP. An ecological checklist (presented in Appendix C, Form 18 of the RECAP) shall be used to determine if a tier 1 (screening level) Ecological Risk Assessment (ERA) is warranted.

#### **II.D.6. Risk Management Profile**

The Respondent shall include in the CSM a Risk Management Profile that shall describe how each AOI at the facility will be managed for the protection of human health and the environment. The Risk Management Profile will serve as documentation of the results of the site ranking system (described in Section 2.2 of RECAP). The Risk Management Profile will also document the criteria and verify that the SO, MO-1, MO-2 or MO-3 is appropriate for application at each AOI. The Risk Management Profile shall include:

**II.D.6.a.** A table for tracking the management options for each AOI, and the determination made, whether an AOI is deemed for no further action at this time (NFA-ATT) or is going to use either the SO, MO-1, MO-2 or MO-3 management option.

**II.D.6.b.** A list of identified site-wide data gaps for further investigation.

**II.D.6.c.** Documentation of all interim measures which have been or are being undertaken at the facility, including under State or Federal compliance orders, other than those specified in the Order. This documentation shall include the objectives of the interim measures and how the measure is mitigating a

potential threat to human health or the environment and/or is consistent with and integrated into requirements for a long term remedial solution.

## **II.E. INTERIM MEASURES**

**II.E.1.** If at any time during the term of the Order, the Department determines that a release or potential release of hazardous constituents from a SWMU/AOC poses a threat to human health and the environment, the Department may require interim measures. The Department shall determine the specific measure(s) or require the Respondent to propose a measure(s). The interim measure(s) may include a request to modify the Order, a schedule for implementation, and an Interim Measures Workplan. The Department may modify the Order to incorporate interim measures into the Order. However, depending upon the nature of the interim measures, modification of the Order may not be required.

**II.E.2.** The Respondent may propose interim measures at any time by submittal of an Interim Measures Workplan subject to the approval of the Department.

**II.E.3.** The Department shall notify the Respondent in writing of the requirement to perform interim measures and may require the submittal of an Interim Measures Workplan. The following factors will be considered by the Department in determining the need for interim measures and the need for Order modification:

**II.E.3.a.** Time required to develop and implement a final remedy;

**II.E.3.b.** Actual and potential exposure to human and environmental receptors;

**II.E.3.c.** Actual and potential contamination of drinking water supplies and sensitive ecosystems;

**II.E.3.d.** The potential for further degradation of the medium in the absence of interim measures;

**II.E.3.e.** Presence of hazardous wastes in containers that may pose a threat of release;

**II.E.3.f.** Presence and concentration of hazardous waste including hazardous constituents in soil that has the potential to migrate to ground water or surface water;

**II.E.3.g.** Weather conditions that may affect the current levels of contamination;

**II.E.3.h.** Risks of fire, explosion, or accident; and



**II.E.3.i.** Other situations that may pose threats to human health and the environment.

**II.E.5.** Upon approval of the Interim Measures Workplan and completion of the interim measure(s) implementation, the Respondent will submit a report to the Department describing the completed work.

**II.E.6.** At anytime during or after the interim measure(s), including the issuance of an NFA-ATT, the Department may require the Respondent to submit the SWMUs/AOCs for further corrective action.

## **II.F. CAS (CORRECTIVE ACTION STRATEGY) INVESTIGATION WORKPLAN**

**II.F.1.** The CAS Investigation Workplan that describes site investigation activities for corrective action shall be submitted to the Department within 180 days after the scoping meeting between the Respondent and the Department. The CAS Investigation Workplan must address releases of hazardous waste or hazardous constituents to all media, unless otherwise indicated, for those SWMUs/AOCs listed in Appendix 1, Table 1. The focus of the site investigation phase for corrective action is to collect data to fill in data gaps identified in the CSM. The corrective action investigations may be conducted in phases if warranted by site conditions, contingent upon approval by the Department.

**II.F.1.a.** The CAS Investigation Workplan shall describe the management options (MO) for each AOI/release area, data quality objectives for achieving each management option, and proposals for release characterizations (sampling and analysis/quality assurance plans) to support the data quality objectives (DQOs). (DQOs are determined based on the end use of the data to be collected, and the DQO development process should be integrated into project planning and refined throughout the CAS implementation. DQOs shall be used to 1) ensure that environmental data are scientifically valid, defensible, and of an appropriate level of quality given the intended use, and 2) expedite site investigations. The CAS Investigation Workplan is required to have DQOs that are developed to support the performance standard for each release.) The CAS Investigation Workplan shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the site investigations. The scope of work for the site investigation can be found in RECAP Appendix B.

**II.F.1.b.** The CAS Investigation Workplan shall describe sampling, data collection quality assurance, data management procedures (including formats for documenting and tracking data and other results of investigations) and health and safety procedures.

**II.F.1.c.** Development of the CAS Investigation Workplan and reporting of data shall be consistent with the latest version of the following EPA and State guidance documents or the equivalent thereof:

**II.F.1.c.(1)** Guidance for the Data Quality Assessment, Practical Methods for Data Analysis. QA97 Version EPA QA/G-9. January 1998;

**II.F.1.c.(2)** Guidance for the Data Quality Objectives Process. EPA QA/G-4. September 1994;

**II.F.1.c.(3)** Data Quality Objectives Remedial Response Activities. EPA/540/G87-003. March 1987;

**II.F.1.c.(4)** Guidance on Quality Assurance Project Plans. EPA QA/G-5. February 1998;

**II.F.1.c.(5)** Interim EPA Data Requirements for Quality Assurance Project Plans. EPA Region 6, Office of Quality Assurance. May 1994;

**II.F.1.c.(6)** 29 CFR 1910.120 (b) for the elements to Health and Safety plans;

**II.F.1.c.(7)** RCRA Groundwater Monitoring: Draft Technical Guidance EPA/530-R-93-001 November 1992;

**II.F.1.c.(8)** Test Methods for Evaluating Solid Waste, Physical/Chemical Methods; SW-846, 3<sup>rd</sup> Edition. November 1992, with revisions;

**II.F.1.c.(9)** The Handbook - Construction of Geotechnical Boreholes and Groundwater Monitoring Systems," prepared by the DEPARTMENT and the Louisiana Department of Transportation and Development. This document is printed by and available from the Louisiana Department of Transportation and Development, Water Resources Section, P. O. Box 94245, Baton Rouge, Louisiana 70804-9245; and

**II.F.1.c.(10)** The LAC 33:I.Chapter 13 and Louisiana Department of Environmental Quality Risk Evaluation/Corrective Action Program (RECAP).

**II.F.2.** After the Respondent submits the CAS Investigation Workplan; the Department will approve, disapprove, or otherwise modify the CAS Investigation Workplan in writing. (All approved workplans become enforceable components of the Order.)

In event of disapproval (in whole or in part) of the workplan, the Department shall specify deficiencies in writing. The Respondent shall modify the CAS Investigation Workplan to correct these within the time frame specified in the notification of disapproval by the Department. The modified workplan shall be submitted in writing to the Department for review. Should the Respondent take exception to all or part of the disapproval, the Respondent shall submit a written statement of the ground for the exception within fourteen (14) days of receipt of the disapproval.

**II.F.3.** The Department shall review for approval, as part of the CAS Investigation Workplan or as a new workplan, any plans developed pursuant to Condition II.L addressing further investigations of newly-identified SWMUs/AOCs, or Condition II.M addressing new releases from previously-identified SWMUs/AOCs.

## **II.G. IMPLEMENTATION OF SITE INVESTIGATION ACTIVITIES UNDER CAS**

Within fourteen (14) days after the Respondent has received written approval from the Department for the CAS Investigation Workplan, the Respondent shall implement the site investigation activities according to the schedules and in accordance with the approved CAS Investigation Workplan and the following:

**II.G.1.** The Respondent shall notify the Department at least 10 working days prior to any field sampling, field-testing, or field monitoring activity required by the CAS to give personnel authorized by the Department the opportunity to observe investigation procedures and/or split samples.

**II.G.2.** Deviations from the approved CAS Investigation Workplan, which are necessary during implementation, must be approved by the Department and fully documented and described in the progress reports (Condition II.C), RECAP Report (Condition II.H) and the final Risk Management Plan (Condition II.J).

## **II.H. RECAP REPORT**

Within ninety (90) days after completion of the site investigation the Respondent shall submit a RECAP Report to the Department for approval. The RECAP Report shall document the results of the site investigation activities, and the evaluation of the impacts from releases. The Department will review and evaluate the report and provide the Respondent with written notification of the report's approval or a notice of deficiency. If the Department determines the RECAP Report does not fully meet the objectives stated in the CAS Investigation Workplan (Condition II.F), the Department shall notify the Respondent in writing of the report's deficiencies, and specify a due date for submittal of a revised Final Report to the Department.

**II.H.1.** The Respondent shall screen site-specific data using the appropriate RECAP standard (RS) for each AOI (depending on the MO), evaluate impacts from releases with exposure scenario evaluations, and update the Risk Management Profile of the CSM.

**II.H.2.** The report shall include, but not be limited to, the following:

**II.H.2.a.** Documentation of site investigation activities and results;

**II.H.2.b.** Evaluation of exposure scenarios to document impacts from releases;

**II.H.2.c.** Deviations from the CAS Investigation Workplan;

**II.H.2.d.** Results of screening activities using RECAP standards (RS), including SO, MO-1, MO-2, or MO-3 RS for each media;

**II.H.2.e.** The revised CSM with updated profiles which incorporate investigation and screening results; and

**II.H.2.f.** Proposed revisions to performance standards based on new information (e.g., change in land use, difference in expected receptors and/or exposure, or other differences in site conditions), if warranted.

## **II.I. REMEDIAL ALTERNATIVES STUDY**

Upon completion and approval of the RECAP Report, the Respondent shall proceed with the evaluation of remedial alternatives to complete corrective action for each AOI according to the performance standards described in Condition II.A.2. The remedial alternatives shall be submitted to the Department in the Remedial Alternatives Study (RAS) within ninety (90) days of the Department's approval of the RECAP Report. In the Remedial Alternatives Study, the Respondent shall identify and evaluate various potential remedies that would meet the performance-based corrective action objectives and propose one or more specific remedies based on an evaluation of applicable data and available corrective action technologies. The RAS shall be prepared in a manner that addresses the extent and nature of the contamination at the facility.

**II.I.1.** The Respondent shall evaluate remedies for each AOI that shall:

**II.I.1.a.** attain compliance with corrective action objectives for releases of hazardous waste and/or hazardous constituents, as established in the Conceptual Site Model or in later investigations approved by the Department;

**II.I.1.b.** control sources of releases;

**II.I.1.c.** meet acceptable waste management requirements;

**II.I.1.d.** protect human health and the environment; and

**II.I.1.e.** meet applicable statutory and regulatory requirements (as noted in Condition II.A.2.b).

**II.I.2.** The Respondent shall evaluate the use of presumptive remedies and innovative technologies to achieve the appropriate remedial performance standards for each AOI.

**II.I.3.** The Respondent shall review the current interim measures/ stabilization activities to evaluate if these measures meet all the criteria for final remedy.

**II.I.4.** If under certain site-specific conditions, or when it is not technically or economically feasible to attain the corrective action objectives, the Respondent may propose to use institutional controls to supplement treatment or containment-based remedial actions upon approval of the Department (Section 2.15 of RECAP).

**II.I.5.** The RAS shall at a minimum include:

**II.I.5.a.** An evaluation of the performance reliability, ease of implementation, and the potential impacts of the potential remedies;

**II.I.5.b.** An assessment of the effectiveness of potential remedies in achieving adequate control of sources and meeting remedial performance standards;

**II.I.5.d.** An assessment of the costs of implementation for potential remedies;

**II.I.5.e.** An assessment of the time required to begin and complete the remedy;

**II.I.5.f.** An explanation of the rationale for the remedy proposed for each AOI or group of AOIs; and

**II.I.5.g.** An assessment of institutional requirements (e.g., state Order requirements that may impact remedy implementation).

**II.I.6.** The Department will review and evaluate the RAS and provide the Respondent with written notification of the study's approval or a notice of deficiency. If the Department determines the RAS does not fully meet the requirements detailed in Conditions II.I.1 through II.I.5, the Department shall notify the Respondent in writing of the RAS's deficiencies, and specify a due date for submittal of a revised RAS to the Department. In addition, the Department may require the Respondent to evaluate additional remedies or particular elements of one or more proposed remedies.

## **II.J. RISK MANAGEMENT PLAN**

Within ninety (90) days of the Department's approval of the RAS, the remedy/remedies proposed for selection shall be documented and submitted in the Risk Management Plan. The Respondent shall propose corrective action remedies in accordance with Chapter IV of the RCRA Corrective Action Plan (Final), May 1994, OSWER Directive 9902.3-2A or as directed by the Department.

**II.J.1.** The Risk Management Plan shall at a minimum include:

**II.J.1.a.** A summary of the remedial alternatives for each AOI and the rationale used for remedy selection;

**II.J.1.b.** The final CSM with proposed remedies, including locations of AOIs addressed by a risk management activity, COC concentrations that represent the long-term fate and transport of residual COCs and the exposure pathways affected by the risk management activity;

**II.J.1.c.** Cost estimates and implementation schedules for proposed final remedies;

**II.J.1.d.** Proposed remedy design and implementation precautions, including special technical problems, additional engineering data required, Orders and regulatory requirements, property access, easements and right-of-way requirements, special health and safety requirements, and community relations activities;

**II.J.1.e.** Remedy performance criteria and monitoring:

The Respondent shall identify specific criteria (such as land use changes, fate and transport model verification and constructed remedy performance) that will be evaluated to demonstrate that the risk management activity implemented will remain protective. A schedule for periodic performance review (such as monitoring data summaries, including graphical and statistical analyses) shall be established to demonstrate that the implemented activities are consistently achieving and maintaining desired results. Further, a mechanism shall be established to re-evaluate risk management activities in the event the implemented action does not achieve and maintain the performance standards;

**II.J.1.f.** Contingency plans; and

**II.J.1.g.** Description and schedules for performance reviews.

**II.J.2.** After the Respondent submits the Risk Management Plan, the Department will review and evaluate the plan and subsequently either inform the Respondent in writing that the plan is acceptable for public review or issue a notice of deficiency.

**II.J.3.** If the Department determines the Risk Management Plan does not fully meet the remedial objectives, the Department shall notify the Respondent in writing of the plan's deficiencies and specify a due date for submittal of a revised Final Risk Management Plan. In addition, the Department may require the Respondent to evaluate additional remedies or particular elements of one or more proposed remedies.

**II.J.4.** After the Department has determined the Risk Management Plan is acceptable for public review, the Department shall public notice the plan with a forty-five (45) day comment period.

**II.J.5.** After conclusion of the comment period, the Department shall either approve or disapprove the Risk Management Plan.

**II.J.6.** If, after considering all public comments, the Department determines that the Risk Management Plan is adequate and complete, the Department will issue a public notice for final approval of the plan and modification of the Order, along with a responsiveness summary of all significant comments received during the comment period. The resultant modified Order will include schedules for remedy implementation as well as financial assurance provisions as required by Condition II.A.5 of this CAS document.

## **II.K. DETERMINATION OF NO FURTHER ACTION**

### **II.K.1. NFA-ATT DETERMINATIONS FOR SPECIFIC SWMUs/AOCs**

**II.K.1.a.** Based on the results of the site investigations, screening, risk evaluations and risk management activities, the Respondent may request a NFA-ATT determination for a specific SWMU/AOC. The NFA-ATT request must contain information demonstrating that there are no releases of hazardous constituents from a particular SWMU/AOC that pose a threat to human health and/or the environment.

The basis for the determination of NFA-ATT shall follow the guidelines as described in the RECAP (Section 1.2.1 of RECAP) for each AOI, depending on the MO used.

**II.K.1.b.** If, based upon review of the Respondent's request for a NFA-ATT, the results of the site investigations, and other information the Department determines that releases or suspected releases from an individual SWMU/AOC which were investigated either are non-existent or do not pose a threat to human health and/or the environment, the Department may grant the request.

**II.K.1.c.** Upon approval of the NFA-ATT by the Department, the Respondent must notify the facility mailing list within ninety (90) days of the Department's approval of the request.

### **II.K.2. FACILITY-WIDE NFA-ATT DETERMINATION**

**II.K.2.a.** Upon the completion of all activities specified in the Risk Management Plan and after all SWMUs and AOCs at the facility have been remediated according to the standards dictated by the selected RECAP MO,

the Respondent shall submit a summary report supporting a determination of NFA-ATT on a facility-wide basis.

**II.K.2.b.** The summary report must include a historical narrative for each SWMU/AOC at the site that includes a summary of the investigation, sampling & analysis, remedial, and confirmatory sampling activities leading to the NFA-ATT request. The basis for the determination of NFA-ATT shall follow the guidelines as described in the RECAP (Section 1.2.1 of RECAP) for each AOI, depending on the MO used. The facility-wide NFA-ATT determination must consider any newly-identified SWMUs/AOCs discovered after submittal of the Risk Management Plan.

**II.K.2.c.** The Department will review and evaluate the summary report and subsequently either inform the Respondent in writing that the report is acceptable for public review or issue a notice of deficiency.

**II.K.2.d.** If the Department determines the summary report does not fully demonstrate that all remedial objectives have been satisfied, the Department shall notify the Respondent in writing of the summary report's deficiencies and specify a due date for submittal of a revised summary report.

**II.K.2.e.** After the Department has determined the facility-wide NFA-ATT summary report is acceptable for public review, the Department shall public notice the report with a forty-five (45) day comment period.

**II.K.2.f.** After conclusion of the comment period, the Department shall either approve or disapprove the facility-wide NFA-ATT.

**II.K.2.g.** If, after considering the facility-Wide NFA-ATT summary report, the results of the site investigations, confirmatory sampling, and other pertinent information, and all public comments, the Department determines that all SWMUs and AOCs have been remediated to the selected MO and no further action at the facility is warranted, the Department will issue a public notice for final approval of the report and modification of the Order, along with a responsiveness summary of all significant comments received during the comment period.

**II.K.2.h.** The CAS document will remain a part of the modified Order in the event that the remedial actions taken fail to maintain the established performance standard and to address any SWMUs/AOCs discovered at a later date.

### **II.K.3. CONTINUED MONITORING**

If necessary to protect human health and/or the environment, a determination of NFA-ATT shall not preclude the Department from requiring continued monitoring of



air, soil, groundwater, or surface water, when site-specific circumstances indicate that releases of hazardous waste or hazardous constituents are likely to occur.

#### **II.K.4. ADDITIONAL INVESTIGATIONS**

A determination of NFA-ATT shall not preclude the Department from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU/AOC at the facility that is likely to pose a threat to human health and/or the environment. In such a case, the Department shall direct the Respondent accordingly and/or initiate a modification to the Order.

#### **II.L. NOTIFICATION REQUIREMENTS FOR AND ASSESSMENT OF NEWLY-IDENTIFIED SWMUs AND POTENTIAL AOCs**

**II.L.1.** The Respondent shall notify the Department, in writing, of any newly-identified SWMUs and potential AOCs (i.e., a unit or area not specifically identified during previous corrective action assessments, RFA, etc.), discovered in the course of ground water monitoring, field investigations, environmental audits, or other means, no later than thirty (30) days after discovery. The Respondent shall also notify the Department of any newly-constructed land-based SWMUs (including but not limited to, surface impoundments, waste piles, landfills, land treatment units) and newly-constructed SWMUs where any release of hazardous constituents may be difficult to identify (e.g., underground storage tanks) no later than thirty (30) days after construction. The notification shall include the following items, to the extent available:

**II.L.1.a.** The location of the newly-identified SWMU or potential AOC on the topographic map required under LAC 33:V.517.B. Indicate all existing units (in relation to other SWMUs/AOCs);

**II.L.1.b.** The type and function of the unit;

**II.L.1.c.** The general dimensions, capacities, and structural description of the unit (supply any available drawings);

**II.L.1.d.** The period during which the unit was operated;

**II.L.1.e.** The specifics, to the extent available, on all wastes that have been or are being managed at the SWMU or potential AOC; and

**II.L.1.f.** Results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste including hazardous constituents have occurred, are occurring, or are likely to occur from the SWMU/AOC.

**II.L.2.** Based on the information provided in the notification, the Department will

determine whether or not the area is a newly-identified SWMU or AOC. If the area is determined to be a newly-identified SWMU or AOC, the Department will inform the Respondent in writing and require the Respondent to notify the facility mailing list that the newly-identified SWMU/AOC has been added to Appendix 1, Table 1 of this CAS document.

Further, the Department will determine the need for further investigations or corrective measures at any newly identified SWMU or AOC. If the Department determines that such investigations are needed, the Department may require the Respondent to prepare a plan for such investigations. The plan for investigation of SWMU or AOC will be reviewed for approval as part of the current CAS Investigation Workplan or a new CAS Investigation Workplan. The results of the investigation of any newly-discovered SWMU/AOC shall be incorporated into the CSM.

## **II.M. NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT A SWMU OR AOC**

The Respondent shall notify the Department of any release(s) from a SWMU or AOC of hazardous waste or hazardous constituents discovered during the course of ground water monitoring, field investigation, environmental auditing, or other means. The notification must be in accordance with the procedures specified in the Order and LAC 33: I.Chapter 39 and shall be based upon the nature, extent, and severity of the release. Such newly-discovered releases may be from newly-identified SWMUs or AOCs, newly-constructed SWMUs, or from SWMUs or AOCs for which, based on the findings of the CSM, completed RECAP Report, or investigation of an AOC, the Department had previously determined no further investigation was necessary. The notification shall include information concerning actual and/or potential impacts beyond the facility boundary and on human health and the environment, if available at the time of the notification.

The Department may require further investigation and/or interim measures for the newly-identified release(s), and may require the Respondent to prepare a plan for the investigation and/or interim measure. The plan will be reviewed for approval as part of the CAS Investigation Workplan or a new CAS Investigation Workplan. The Order will be modified to incorporate the investigation, and the Respondent shall be required to notify the facility mailing list within ninety (90) days of the Department's notification. The results of the investigation of any newly-identified release(s) shall be incorporated into the CSM.

## **II.N. PUBLIC PARTICIPATION REQUIREMENTS**

Public participation is an essential element in the implementation of any corrective action program at the facility. The CAS promotes the early and continued involvement of stakeholders in site remediation activity during issuance of the Order, modification of the Order, and other key junctures of the CAS process as denoted above. During minor stages of the CAS process as delineated in the CAS document, the public shall be kept abreast through the use of the facility mailing list. Additionally, the public is invited to review and comment on the corrective action requirements contained in any draft decisions or draft documents and

the associated plans and reports submitted by the Respondent as delineated in the CAS document. The Department reserves the right to require more extensive public participation requirements based upon site-specific conditions and other relevant factors (e.g., compliance history, potential offsite impact, community interest, etc.).

**Table 1: Corrective Action Strategy Notification and Reporting Requirements**

Below is a summary of the major notifications and reports that may be required by the Department under the CAS in the event of releases requiring RCRA corrective action. The Department will notify the Respondent of the notification and reporting requirements during the scoping meeting or another applicable stage of the corrective action process.

<b>ACTION</b>	<b>DUE DATE</b>
Submit Notice of Intent to request use of the CAS to the Department for review and comment (Condition II.B.1)	Within sixty (60) days of the issuance of the Order (if facility corrective action is required)
CAS Scoping Meeting held between facility and Department (Condition II.B.2)	Within sixty (60) days of submittal of the Notice of Intent
Submit Progress Reports on all activities to the Department (Condition II.C.1)	Schedule to be determined by the Department on a case-by-case basis
Make available other reports relating to corrective action to the Department (Condition II.C.2)	Upon request of the Department
Provide briefings to the Department (Condition II.C.3)	As necessary and upon request by the Department
Submit Conceptual Site Model (CSM) (Condition II.D) and facility Performance Standards (Condition II.A.2) to the Department	Within one hundred and twenty (120) days after the scoping meeting
Perform Interim Measures (Condition II.E)	As determined by the Department on a case by case basis
Submit Corrective Action Strategy (CAS) Workplan for the facility investigation to the Department (Condition II.F)	Within one hundred and eighty (180) days after the CAS Scoping Meeting
Implement site investigation activities under CAS Investigation Workplan according to approved schedule (Condition II.G)	Within fourteen (14) days of receipt of approval by the Department
Submit RECAP Report to the Department (Condition II.H)	Within ninety (90) days of completion of the site investigation
Submittal of Remedial Alternatives Study (RAS) to the Department (Condition II.I)	Within ninety (90) days of approval of the RECAP Report by the Department
Submit Risk Management Plan to the Department (Condition II.J)	Within ninety (90) days of approval of the RAS by the Department
Submit requests for unit specific and facility-wide NFA-ATT determinations to the Department (Condition II.K)	As necessary
Notification of newly-identified SWMUs and potential AOCs (Condition II.L)	No later than thirty (30) days after discovery
Notification of newly-discovered releases (Condition II.M)	According to the requirements of Conditions II.E.16 through II.E.20 of the Order

## APPENDIX 1: SUMMARY OF CORRECTIVE ACTION ACTIVITIES

The intent of Appendix 1 is to provide an overview of the history and current status of the corrective action process at the site and may not necessarily provide a definitive regulatory determination for a particular SWMU (solid waste management unit) or AOC (area of concern). The classification of an individual SWMU or AOC is subject to change by the Administrative Authority based on future geological/hydrogeological conditions and future available information available to the Administrative Authority.

A RCRA Facility Assessment (RFA) was conducted at the ConocoPhillips facility by United States Environmental Protection Agency (USEPA) Region VI contractor A.T. Kearney, Inc. (Kearny, 1987). The Final RFA Report, dated January 1987, was prepared by Kearney and Pope-Reid Associates, Inc. Of the forty-seven (47) SWMUs listed in the RFA, only seventeen (17) required further investigations.

Seventeen (17) SWMUs were listed in the 1984 Hazardous and Solid Waste Amendments (HSWA) Section of ConocoPhillips's Hazardous Waste Permit, LAD 990 683 716, for the Proposed New South Landfarm (the Land Treatment Unit). These seventeen (17) SWMUs are identified in Table 1.

In September 1996, ConocoPhillips submitted the Description of Current Conditions (RETEC, 1996a) and the Phase I RCRA Facility Investigation (RFI) Work Plan (RETEC, 1996b). The Work Plan and report detailed historical closure activities for the SWMUs, historical contaminant assessments and corrective actions, and a summary of historical waste generation and characterization at the refinery.

In June 1999, the Phase I RFI draft report was completed and submitted to the LDEQ by SECOR International Incorporated (SECOR, June 1999). Seven (7) of the original seventeen (17) SWMUS were not investigated during the Phase I RFI because they were undergoing groundwater detection monitoring or assessment monitoring under other LDEQ regulatory programs, the units were undergoing closure in accordance with LDEQ-approved plans, or the units had been granted "clean closure" by LDEQ. These SWMUs are as follows (additional historical information is provided in Table 1):

<u>SWMU</u>	<u>Description</u>
4	Run Down Area (originally known as Tanks T-6, T-7 and T-8) ***
8	Process Lagoon (Polishing Pond)
10	Chromium and Lead Storage Facility
14	South Landfarm
15a	North Landfarm Stormwater Basin
15b	South Landfarm Stormwater Basin
16	Dock Facilities (a.k.a., Clooney Docks Loop Area) ***
17	Permitted and Non-permitted Outfalls and Ditches

\*\*\* NOTE: SWMU 4 and SWMU 16 have ongoing monitoring and/or corrective action as delineated in Table 1.

Ten (10) SWMUs and three additional sites were addressed in the Phase I RFI and investigated further during the Phase II RFI activities. The objectives of the Phase II RFI field activities were to provide further investigation information at selected SWMUs within the ConocoPhillips Refinery to comply with the requirements of the 1984 HSWA and to evaluate the vertical and/or lateral extent of the impacts at selected SWMUs. In December 2005, the Phase II RFI and RECAP Report was completed and submitted to the LDEQ by URS Corporation. The SWMUs/AOCs, addressed in this report, are designated as follows:

<u>SWMU</u>	<u>Description</u>
1	Slop Oil Tank T-120
2	Slop Oil Tank T-104
3	T-104 / T-120 Sump
5	Caustic Storage Tanks T-115
6	Slop Oil Tank T-114
7	Pickett Thickener
9	Sludge Settling Lagoon
11	Tank Bottoms Weathering Area
12	Oily Waste Disposal Area
13	Rack Drainage Area (a.k.a. diesel loading rack)
	Background Locations ***
	SWMU 4 – Run Down Area ***
	Construction Areas of the West Yard ***

\*\*\* NOTE: Three (3) additional sites (Background Locations, SWMU 4 - Run Down Area, and Construction Areas of the West Yard) were also included in the December 2005 Phase II RFI and RECAP Report, in addition to the ten (10) SWMUs carried forward for further investigation (SWMUs 1, 2, 3, 5, 6, 7, 9, 11, 12 and 13) from the Phase I RFI.

SWMUs 1, 2, & 3 and SWMUs 5 & 6 were combined into two separate investigation groups for the Phase I & II RFIs. The remaining SWMUs were evaluated separately. The following SWMU's and sites were addressed in the December 2005 Phase II RFI and RECAP Report.

#### SWMUs 1, 2, & 3 – Slop Oil Tanks T-120 & T-104, and Tank T-104/T-120 Sump

SWMUs 1, 2, & 3 are located in the south central portion of the refinery, southeast of the Coker Unit. Tank T-120 (SWMU 1) is a 15,000 barrel capacity steel tank. It is a slop tank used to collect crude desalter slop oil for the sour crude unit. Tank T-104 (SWMU 2) is a steel tank with 10,000 barrel capacity. It contains recovered oil prior to the Primary Dissolved Air Flotation (DAF) Unit. The T-104/T-120 sump (SWMU 3) is located between the two tanks and pumps wastewater from the two tanks to the wastewater treatment system. A 4-foot concrete dike wall surrounds Tanks T-120 and T-104 and the T-104/T-120 sump. The area inside the dike wall around the tanks is covered with approximately 6 inches of gravel. Both tanks and the sump are constructed on a concrete pad. The area around SWMUs 1, 2, & 3 is bordered by concrete pavement on the north and east sides, concrete and partially exposed earth on the west side, and an earthen ditch on the south side. The following Constituents of Concern (COCs) have been detected in soil and/or groundwater:

- Benzo(a)pyrene
- Chrysene

- Dibenz(a,h)anthracene

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 10-foot Sand groundwater at SWMUs 1, 2, & 3. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

Additional assessment activities will be completed at a later date.

#### SWMUs 5 & 6 – Caustic Storage Tank T-115 and Slop Oil Tank T-114

Tank T-115 (SWMU 5) was a 500 barrel capacity carbon steel tank constructed on a concrete pad. Constructed in 1952, historically, T-115 received caustic wastewater from Tanks T-7 and T-8. Tank T-114 (SWMU 6) was a 1,500 barrel capacity carbon steel tank constructed on a concrete pad. Historically, T-114 was used for treatment and storage of recovered heavy slop oil from T-3505. The tanks were surrounded by gravel and fill material. Tanks T-115 and T-114 were cleaned and taken out of service.

In June 2005, the tanks were decommissioned for installation of a new caustic scrubber unit in the area. The 4-foot concrete dike, concrete pads, and all associated equipment within the diked area have also been decommissioned. Soil was removed to three (3) feet below ground surface (bgs) within the diked area. The following COCs have been detected in soil and/or groundwater:

- Benzo(a)pyrene
- Chrysene
- Dibenz(a,h)anthracene

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 25-foot Sand groundwater at SWMUs 5 & 6. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

Additional assessment activities will be completed at a later date.

### SWMU 7 – Pickett Thickener

The Pickett Thickener (SWMU 7) is a 15 foot diameter, nine foot high aboveground carbon steel tank that was a component of the activated sludge unit. It is located immediately northwest of the clarifier. Previously, clarifier bottoms were pumped to the Pickett Thickener as needed. The Pickett Thickener has been out of service since the completion of the new wastewater treatment system in the fall of 1996. The area north of SWMU 7 is concrete paved. Bayou Verdine and the inactive clarifier are located to the west and south of SWMU 7 and the aeration basin is located to the east. SWMU 7 is covered mainly by grass and topsoil with some areas of gravel. The following COCs have been detected in soil and/or groundwater:

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Chrysene
- Dibenzo(a,h)anthracene
- Diesel Range Organics (C10 – C28)

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 10-foot Sand groundwater at SWMU 7. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

From correspondence dated March 6, 2008, URS Corporation proposed to perform additional assessment activities at proposed locations in SWMU 7. These activities will be conducted in accordance with Phase II RFI methodology and RECAP criteria and the recommendations for additional sampling made in the December 2005 Phase II RFI and RECAP Report. In addition to this environmental assessment, a geotechnical evaluation of soils will also be conducted along the banks of Bayou Verdine at SWMU 7. Data will be used in the RFI and to determine the feasibility and design (as needed) of partial response actions along Bayou Verdine at this SWMU.

Additional assessment activities not addressed in this March 6, 2008 correspondence (proposed at other SWMUs and areas of the RFI not located near Bayou Verdine,) will be completed at a later date.

On March 27, 2008, the Department granted approval and discussed the Planned Additional Assessment/RFI II.

### SWMU 9 – Sludge Settling Lagoon

The Sludge Settling Lagoon (SWMU 9) is located in the south central portion of the refinery and west of the Solid Waste Impoundment Process Lagoon and Bayou Verdine. SWMU 9 is approximately 300 feet by 190 feet and three (3) to eight (8) feet deep. It is underlain by a natural clay liner. The lagoon operated from 1976 to March 1982. The lagoon is bordered on the north side by a gravel road and on the east side by Bayou Verdine. The remaining area is surrounded by open grass field with low lands to the south. The following COCs have been detected in soil and/or groundwater:

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Benzene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b) fluoranthene
- Benzo(g,h,i)perylene
- Chromium
- Chrysene
- Dibenz(a,h)anthracene
- Diesel Range Organics (C10 – C28)
- Ideno (1,2,3-cd)pyrene
- Lead
- Trivalent Chromium

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 10-foot Sand groundwater at SWMU 9. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

From correspondence dated March 6, 2008, URS Corporation proposed to perform additional assessment activities at proposed locations in SWMU 9. These activities will be conducted in accordance with Phase II RFI methodology and RECAP criteria and the recommendations for additional sampling made in the December 2005 Phase II RFI and RECAP Report. In addition to this environmental assessment, a geotechnical evaluation of soils will also be conducted along the banks of Bayou Verdine at SWMU 9. These data will be used in the RFI and to determine the feasibility and design (as needed) of partial response actions along Bayou Verdine at this SWMU. Additional assessment activities not addressed in this March 6, 2008 correspondence (proposed at other SWMUs and areas of the RFI not located near Bayou Verdine,) will be completed at a later date.



On March 27, 2008, the Department granted approval and discussed the Planned Additional Assessment/RFI II.

#### SWMU 11 – Tank Bottoms Weathering Area

The Tank Bottoms Weathering Area (SWMU 11) was located where the Final DAF unit partially covers the old weathering area. SWMU 11 received sludge from storage tanks. Prior to closure of SWMU 11, all sludge was moved offsite. The following COCs have been detected in soil and/or groundwater:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Chrysene
- Dibenzo(a,h)anthracene

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 10-foot Sand groundwater at SWMU 11. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

Additional assessment activities will be completed at a later date.

#### SWMU 12 – Oily Waste Disposal Area

The Oily Waste Disposal Area (SWMU 12) is located in the vicinity of the Fines Pit, south of Old Spanish Trail and east of Faubacher Ditch. The northern portion of SWMU 12 is occupied by two large crude oil tanks (T-2001 and T-2002) within an earthen diked containment structure. This northern portion is covered with top soil, grass and limestone gravel roadways. The southern portion is primarily covered by concrete and asphalt paving, and is part of active operating units. The following COCs have been detected in soil and/or groundwater:

- Antimony
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b) fluoranthene
- Benzo(g,h,i)perylene

- Benzo(k) fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Diesel Range Organics
- Fluorene
- Ideno (1,2,3-cd)pyrene
- Oil Range Organics
- Phenanthrene
- Pyrene

In February 2007, a Phase II RFI Addendum Report, prepared by URS Corporation, documented the additional groundwater investigation conducted for the Phase II RFI and RECAP at the refinery. The objective of this additional groundwater sampling was to determine if reported concentrations of certain polycyclic aromatic hydrocarbons (PAHs) during the initial Phase II RFI were the result of suspended solids in the groundwater samples from the temporary monitor wells. Groundwater samples were collected and analyzed for total (unfiltered) and dissolved (filtered) PAHs.

Analytical results indicate that reported concentrations of certain PAHs in groundwater are the result of suspended solids and are not due to dissolved PAHs in groundwater.

According to URS' February 23, 2007 Phase II RFI Addendum Report, no further evaluation is necessary for the 10-foot Sand and 25-foot Sand groundwater at SWMU 12. URS recommended the plugging and abandonment of the Phase II RFI temporary monitor wells to proceed as soon as practical.

Additional assessment activities will be completed at a later date.

#### SWMU 13 – Rack Drainage Area (a.k.a. diesel loading rack)

The Rack Drainage Area (SWMU 13,) also referred to as the diesel loading rack, is approximately 50 feet wide and 575 feet long. In the past, diesel fuel has been spilled during transfer to railcars. This spilled fuel was collected in metal drip pans and placed in an underground storage tank. The fuel was then pumped out by vacuum truck. All spillage now drains to a sump which is pumped to the slop oil recovery system. SWMU 13 is covered by railroad tracks, a loading rack with concrete footings and paving surrounded by limestone gravel and fill material. No COCs have been detected in soil and/or groundwater. In the December 2005 Phase II RFI and RECAP Report, URS recommends no further action at this time since there were no exceedances of the SO (Screening Option) or MO-1 (Management Option 1) RECAP standards at this area.

#### Background Locations

During Phase I, there were five (5) background sites (Areas 1, 2, 3, 4, and 5) selected around the perimeter of the refinery. These were selected as background locations because they were not located within the active units or areas. During Phase I activities, soil borings were completed at these five (5) sites. Area 1 is located at the West End of the refinery and is being investigated and reported separately from the RFI. During Phase II, Areas 2-5 were evaluated. For Areas 2 and 3, there were no exceedances for SO or MO-1 RECAP standards in these areas. For Areas 4 and 5, the following COCs have been detected in surface soils:

- Arsenic
- Benzo(a)pyrene
- Dibenz(a,h)anthracene
- Lead

In the December 2005 Phase II RFI and RECAP Report, URS recommended no further investigation or evaluation for Areas 2 and 3, and additional assessment activities will be completed at a later date for Areas 4 and 5.

#### SWMU 4 – Run Down Area

The Run Down Area (SWMU 4) is located in the East Tank Farm.

From correspondence dated March 18, 1996, the Rundown Area (RDA) consisted of numerous above-ground storage tanks with product transfer piping throughout. Tanks within the RDA are used for the storage of petroleum products and intermediates. Two areas within the RDA were identified for subsurface assessment work. These areas of concern include the former Tank 19 (T-19) area and Tanks 6, 7, and 8 (T-6, T-7, and T-8).

Activities proposed in the T-19 Work Plan (ConocoPhillips, 1995a) were based on results of preliminary subsurface assessment in the area. No subsurface assessment data existed for the T-6, T-7, and T-8 area; however, the area was designated as a SWMU during the refinery RFA even though no wastes were stored in the tanks. Previously proposed RFI assessment activities at T-6 through T-8 are described in the facility RFI Work Plan (ConocoPhillips, 1995b).

Based on the information presented in the T-19 Work Plan and RFI Work Plan (which included the T-6, T-7 and T-8 area), the historical use and nature of constituents potentially impacting groundwater were similar across the RDA. Given the similarities, ConocoPhillips proposed to manage the entire RDA under one subsurface assessment and groundwater monitoring program. T-6, T-7, T-8 and T-19 were incorporated into a voluntary assessment of groundwater quality at the RDA. This combined comprehensive assessment and management approach was approved by LDEQ in a letter dated May 10, 1996.

Subsequently, ConocoPhillips integrated RDA management into the existing East Tank Farm (ETF) groundwater monitoring program, because both are effectively managed together rather than separately.

Currently, the RDA Tanks T-6, T-7, T-8, and T-19 are all decommissioned. The wells near the Rundown Area (combined with all ETF wells) are currently monitored on a quarterly basis at the refinery as part of the LDEQ approved long term monitoring program for the East Tank Farm. Continued monitoring of the RDA as part of the ETF was recommended.

#### Construction Areas of the West Yard

The former Construction Areas of the West Yard are three (3) sites located in a western portion of the refinery near Bayou Verdine. The three sites are designated as areas A, B, and C for report purposes.

According to the Phase II RFI, three separate subsurface sampling programs were performed in the vicinity of these sites in 1992, 1998, and 2000. Based on historical data, it is recommended that additional soil and groundwater samples be collected at construction areas A, B, and C of the West Yard in accordance with Phase II RFI methodology and RECAP criteria. A RECAP assessment will be performed and the results presented as an addendum to the final Phase II RFI and RECAP report.

From correspondence dated March 6, 2008, URS Corporation proposed to perform additional assessment activities at proposed locations in Construction Yards A, B, C. These activities will be conducted in accordance with Phase II RFI methodology and RECAP criteria and the recommendations for additional sampling made in the December 2005 Phase II RFI and RECAP Report.

Additional assessment activities not addressed in this March 6, 2008 correspondence (proposed at other SWMUs and areas of the RFI not located near Bayou Verdine,) will be completed at a later date.

On March 27, 2008, the Department granted approval and discussed the Planned Additional Assessment/RFI II.

The information provided above and in Table1 was supplied from different documents located in LDEQ's Electronic Data Management System (EDMS).

TABLE 1. SUMMARY OF CORRECTIVE ACTION ACTIVITIES

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS Document ID #/ Approval Date</i>
SWMUs 1, 2, & 3	SWMU 1 Slop Oil Tank T-120	15,000 barrel steel slop oil tank used to collect desalter slop oil from the sour crude unit  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report
	SWMU 2 Slop Oil Tank T-104	10,000 barrel steel tank which contains the oil recovered prior to the Primary Dissolved Air Flotation (DAF) unit  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report
	SWMU 3 T-104/T-120 Sump	a sump unit located between T-104 and T-120 which pumps wastewater from the two tanks to the wastewater treatment system  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report

<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
Run Down Area	SWMU 4 Waste Oil Tanks T-6, T-7, and T-8	Tanks T-6, T-7, and T-8 are located in the Run Down Area (RDA), and this area is located in the East Tank Farm (ETF)  These 3 tanks were incorporated into a voluntary assessment of groundwater quality at the RDA, and then the RDA investigation activities were incorporated into the ETF groundwater monitoring program.  Ongoing GW monitoring as part of ETF GW program	December 2005 Phase II and RECAP Report		TBD <sup>2</sup>	1009749 – March 18, 1996 “Assessment of Run Down Area (Product/Intermediate Storage)”
						1008200 – May 10, 1996 “Run Down Area (Tanks #19, 6, 7, and 8) Preliminary Groundwater Flow Investigation Plan Approval (PGFI), ...”
						7981320 – March 8, 2000 “Tank Farm Area Groundwater Quality Report” Volume II of II  33731696 – December 2005 Phase II RFI and RECAP Report
SWMUs 5 & 6	SWMU 5 Caustic Storage Tank T-115	500 barrel carbon steel tank which received caustic wastewater from Tanks T-7 and T-8  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
SWMUs 5 & 6  (continued)	SWMU 6 Slop Oil Tank T-114	1,500 barrel carbon steel tank used for treatment and storage of recovered heavy slop oil from T-3505  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report	December 2005 Phase II RFI Addendum Report	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
			February 2007 Phase II RFI Addendum Report			35745640 – February 23, 2007 Phase II RFI Addendum Report
	SWMU 7 Pickett Thickener	9 foot high x 15 foot diameter tank that is a component of the Activated Sludge Unit; sludge was removed and transported to a filter process  Additional assessment at SWMUs and areas in close proximity to the Bayou Verdine Area of Concern	December 2005 Phase II and RECAP Report	December 2005 Phase II RFI Addendum Report  LDEQ Approval of Planned Additional Assessment dated March 27, 2008	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
			February 2007 Phase II RFI Addendum Report			35745640 – February 23, 2007 Phase II RFI Addendum Report
						36657302 – March 6, 2008 Notification of Planned Additional Assessment
						36699001 – March 27, 2008 LDEQ approval of Planned Additional Assessment

<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>Corrective Action</i>	<i>EDMS Document ID #/ Approval Date</i>
	SWMU 8 Process Lagoon (Polishing Pond)	Operates under Solid Waste Permit P-0253; unit has an established groundwater monitoring program which contains provisions for addressing any releases to groundwater  Ongoing detection monitoring under SW Permit P-0253	Ongoing detection monitoring under SW Permit P-0253	N/A	5838608 – June 1999 Draft Phase I RFI Report
	SWMU 9 Sludge Settling Pond (West Pond)	Approximately 300 feet by 190 feet and three to eight feet deep and underlain by a natural clay liner  Operated from 1976 to March 1982-bulk of the sludge was remove from the lagoon in August 1984  Additional assessment at SWMUs and areas in close proximity to the Bayou Verdine Area of Concern	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report  LDEQ Approval of Planned Additional Assessment dated March 27, 2008	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report 36657302 – March 6, 2008 Notification of Planned Additional Assessment  36699001 – March 27, 2008 LDEQ approval of Planned Additional Assessment



<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>Corrective Action</i>	<i>EDMS Document ID #/ Approval Date</i>
	SWMU 10 Chromium and Lead Storage Facility	Unit no longer exists, and waste residues along with impacted soils were excavated  The In-Plant Waste Management Unit (IPWMU) was constructed in its place; the IPWMU has been certified closed	December 28, 1995 Certification of Closure for In-Plant Waste Management Unit  May 10, 1999 Groundwater Monitoring Reports In Plant Waste Management Unit	N/A	5838608 -- June 1999 Draft Phase I RFI Report  7519114 - December 28, 1995 Certification of Closure for In-Plant Waste Management Unit  1013416 - May 10, 1999 Groundwater Monitoring Reports In Plant Waste Management Unit  16954321 - October 6, 2000 Conoco-Lake Charles Refinery In Plant Waste Management Unit (Closed)
		The Certification of Closure of the IPWMU was accepted, but groundwater monitoring was required for at least eight (8) additional quarters.  Groundwater monitoring was discontinued and wells were plugged and abandoned	October 6, 2000 Conoco-Lake Charles Refinery In Plant Waste Management Unit (Closed)		

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	SWMU 11 Tank Bottoms Weathering Area	Area temporarily received sludge from storage tanks, and sludge was subsequently removed and disposed at an offsite landfill  Prior to closure, all residual sludges were moved offsite  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report
	SWMU 12 Oily Waste Disposal Area	Located in the vicinity of the Fines Pit, south of Old Spanish Trail and east of Faubacher Ditch  Coke fines are often interbedded with fill material  Additional assessment at a later undetermined date	December 2005 Phase II and RECAP Report  February 2007 Phase II RFI Addendum Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  35745640 – February 23, 2007 Phase II RFI Addendum Report

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	SWMU 13 Rack Drainage Area	Also referred to as the diesel loading rack and is approximately 50 feet wide and 575 feet long; diesel fuel has been spilled during transfer to railcars  No further action at this time is recommended by URS	December 2005 Phase II and RECAP Report		TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
	SWMU 14 South Land Treatment Unit (South Landfarm)	A solid waste unit which was closed in 1990. Post-closure groundwater monitoring was completed in November 1993.  A permitted hazardous waste unit, the Land Treatment Unit (LTU), was placed within the boundaries of the closed South Landfarm, but the LTU never managed hazardous waste. The LTU permit expired.	SW Post-Closure Care Completed – no additional activities required at this time		N/A	5838608 – June 1999 Draft Phase I RFI Report

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS Document ID #/ Approval Date</i>
SWMU 15	SWMU 15a North Landfarm Stormwater Basin	Operates under Solid Waste Permit P-0252; a detection-monitoring program has been implemented	Ongoing detection monitoring under SW Permit P-0252		N/A	5838608 – June 1999 Draft Phase I RFI Report
	SWMU 15b South Landfarm Stormwater Basin	Unit underwent a completed post-closure groundwater monitoring which ended in November 1993.  This unit was upgraded to a permitted hazardous waste unit, the Land Treatment Unit (LTU), in 1991. The LTU never managed hazardous waste and the permit expired. The LTU was certified closed on September 17, 2003.	SW Post-Closure Care Completed / HW clean closed -- no additional activities required at this time		N/A	5838608 – June 1999 Draft Phase I RFI Report
	SWMU 16 Dock Facilities	Unit is being addressed under the accelerated schedule of assessment and remediation activities as approved by LDEQ	Note: This is the same as Clooney Docks.			5838608 – June 1999 Draft Phase I RFI Report

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	SWMU 17 Permitted and Non-permitted Outfalls and Ditches	Refinery discharges to waters of the United States under National Pollutant Discharge Elimination System Permit (NPDES) LA0003026.  The current NPDES permit became effective on June 1, 2007, and incorporates all of the process waters, stormwater outfalls, and all other water (i.e., hydrostatic test waters, etc.)	No additional activities required at this time		N/A	5838608 – June 1999 Draft Phase I RFI Report
Background Locations	Area 1	One of five background sites selected around the perimeter of the refinery; not located within active units or areas  Area 1 is located at the boundary of the West End Project at the refinery;	December 2005 Phase II RFI and RECAP Report (pending approval)		TBD <sup>2</sup>	31043940 – March 18, 2004 Work Plan Phase II RFI  33731696 – December 2005 Phase II RFI and RECAP Report

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of CA Activity</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
Background Locations (continued)	Area 1 (continued)	therefore, it was not included in the Phase II RFI. The West End Project is being addressed separate from the RFI.			
	Area 2	One of five background sites selected around the perimeter of the refinery; not located within active units or areas  No further action at this time is recommended by URS	December 2005 Phase II and RECAP Report	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
	Area 3	One of five background sites selected around the perimeter of the refinery; not located within active units or areas  No further action at this time is recommended by URS	December 2005 Phase II and RECAP Report	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
	Area 4	One of five background sites selected around the perimeter of the refinery;	December 2005 Phase II and RECAP Report	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report

<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
Background Locations (continued)	Area 4	not located within active units or areas			
	(continued)	Additional surface soil assessment at a later undetermined date			
	Area 5	One of five background sites selected around the perimeter of the refinery; not located within active units or areas  Additional surface soil assessment at a later undetermined date	December 2005 Phase II and RECAP Report	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report
	Construction Areas of the West Yard	Three (3) sites located in a western portion of the refinery near Bayou Verdine; designated as areas A, B, and C for report purposes.  Additional assessment at SWMUs and areas in close proximity to the Bayou Verdine Area of Concern	December 2005 Phase II and RECAP Report  LDEQ Approval of Planned Additional Assessment dated March 27, 2008	TBD <sup>2</sup>	33731696 – December 2005 Phase II RFI and RECAP Report  36657302 – March 6, 2008 Notification of Planned Additional Assessment  36699001 – March 27, 2008 LDEQ approval of Planned Additional Assessment

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	West End Project	<p>The West End Project monitors groundwater in the vicinity of the 1986 Groundwater Order Plume, West Ditch Area Plume, Southern Fenceline and 200-Foot Sand, and the Trousdale Road (West End Ponds) Ponds.</p> <p>The 1986 Groundwater Order Plume is not addressed by ConocoPhillips.</p> <p>(Includes Background Area 1.)</p>	Quarterly Ground-water Monitor Well Sampling		TBD <sup>2</sup>	<p>26889475 – May 20, 2005 “Work Plan-Additional Investigation West End Project – Groundwater”</p> <p>August 18, 2003 LDEQ Approval of Work Plan-Additional Investigation West End Project – Groundwater</p> <p>33141913 – July 12, 2005 “Additional Investigation Lake Charles Refinery West End Project”</p> <p>33780438 – January 11, 2006 LDEQ Approval of Additional Investigation Lake Charles Refinery West End Project</p> <p>36639036 – February 25, 2008 “4<sup>th</sup> Quarter 2007 Groundwater Monitor Well Sampling Report”</p>



<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	Tank Farm Area (East Tank Farm)	Consists of the Rundown Area (RDA) and the East Tank Farm (ETF); individual investigations were initiated at each of these areas to address hydrocarbon impacts in groundwater. The two investigations were integrated in June 1996 for more efficient and focused environmental management of the programs.	Ongoing ground-water monitoring program		TBD <sup>2</sup>	7981320 – March 8, 2000 "Tank Farm Area Groundwater Quality Report" Volume II of II  36672425 – March 10, 2008 "Tank Farm Area Semi-Annual Groundwater Quality Report"
Clooney Docks Loop Area	Clooney Docks Loop Area	In 1987, there was a release of 1,2-dichloroethane (EDC) from a crack in a storage tank, Tank 415, sump.  In March 1994, a release of EDC from the CONDEA-Vista pipeline located at the	October 1999 - Groundwater Corrective Action Plan  August 30, 2000 Approval letter from DEQ		Groundwater recovery and monitoring program	4085020 – Vol. I 4084046 – Vol. II October 1999 "Conoco Lake Charles Docks EDC Ground-water Corrective Action Plan"  12655886 – August 30, 2000 Corrective Action Plan Approval Letter

<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	Clooney Docks Loop Area	northwestern edge of the ConocoPhillips Docks Site was discovered following an unloading event.				36638742 – February 29, 2008 “Final Second Half 2007 Semi-Annual EDC Ground-water Remedial Measures Status Report
	(continued)					
	Clooney Docks/ Sampson Street Overpass  Note: This is the same as the Clooney Docks site as per 10/99 CAP approved on 8/30/2000.	Dock facilities on Clooney Loop, a meander of the Calcasieu River, used for product shipping and receiving via large ships and barges; The Louisiana Department of Transportation and Development (LDOT) is considering an overpass expansion in the area just north of the Clooney Loop Marine Docks.				36327798 – October 2, 2007 “Sampson Street Overpass Investigation-Addendum Report”  36402838 – October 31, 2007  36817270 – May 7, 2008

<i>AOC/SWMU Group Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	Delineation of PCE in 25-foot Sand Groundwater: ConocoPhillips Refinery / Air Products Hydrogen Plant	Groundwater investigation at the Air Products Hydrogen Plant co-located at the refinery.  Volatile organic constituents identified in shallow groundwater as result of a subsurface investigation.  Additional assessment at a later undetermined date	Further delineation of impacted groundwater		TBD <sup>2</sup>	30122081 – December 4, 2003 “PCE Groundwater Investigation Area South of the Air Products and Chemicals, Inc. Hydrogen Plant”  34642978 – September 18, 2006 “Summary of Findings and Recommended Additional Sampling-Delineation of PCE in Groundwater-Air Products and Chemicals, Inc. Hydrogen Plant”  35799733 – March 5, 2007 “Summary of Findings and Recommended Additional Sampling-Delineation of PCE in 25-Foot Sand Groundwater-Hydrogen Plant”  35558561 – January 18, 2008 “Summary of Findings and Recommended Additional Sampling-Delineation of PCE in 25-Foot Sand Groundwater-ConocoPhillips Refinery/Air Products Hydrogen Plant”

<i>AOC/SWMU Group or Area</i>	<i>AOC or SWMU Number/Area Name</i>	<i>AOC/SWMU Description</i>	<i>Status of Activity</i>	<i>CA</i>	<i>Corrective Action</i>	<i>EDMS<sup>1</sup> Document ID #/ Approval Date</i>
	Bayou Verdine Area of Concern	John Meyer of EPA is in charge of this project. They plan on dredging 1-2 feet of portions of Bayou Verdine in the near future.	See adjacent text.		See adjacent text.	

<sup>1</sup> EDMS – LDEQ's Electronic Document Management System

<sup>2</sup>TBD – To Be Determined

In the event any new AOCs or SWMUs are discovered, this table will be modified.

The above narrative and Table 1. was prepared on May 22, 2008.